Installation Manual

Uniflair™ LE Accessories

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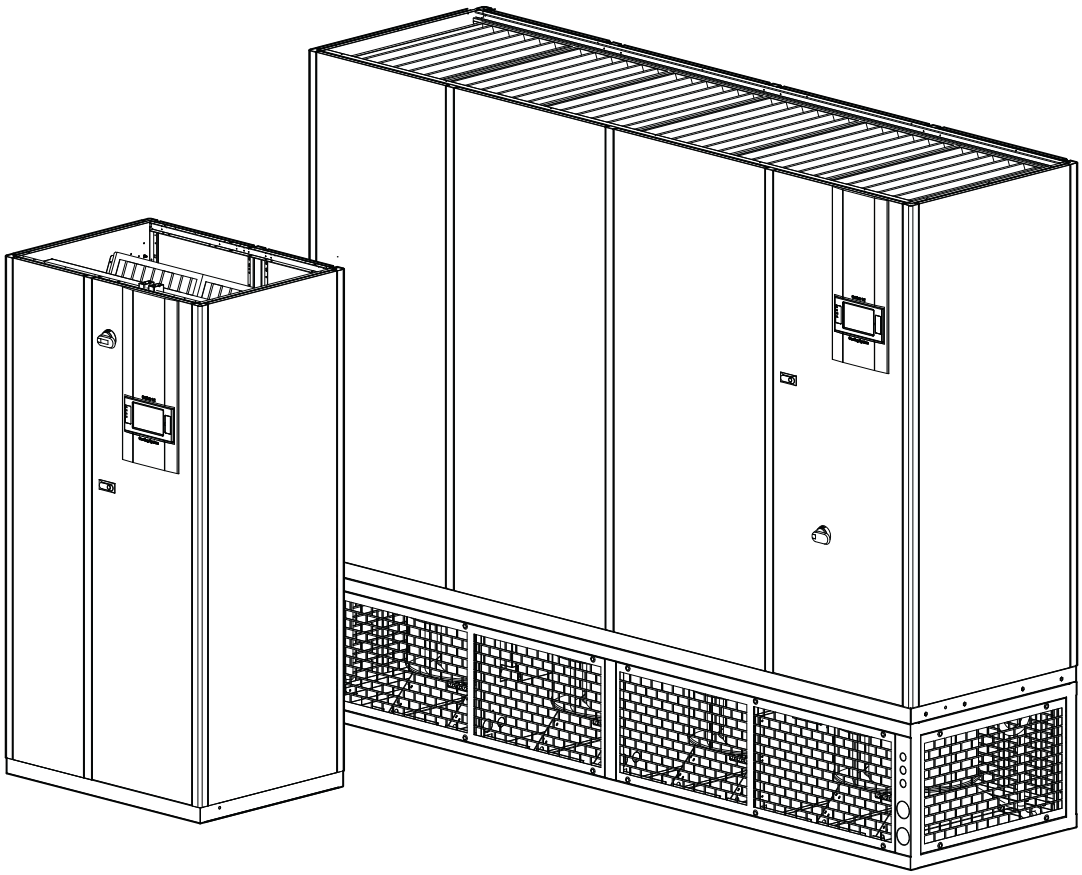

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Safety

Important Safety Information

Read the instructions carefully to become familiar with the equipment before trying to install, operate, service, or maintain it. The following special messages may appear throughout this manual or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.

The addition of this symbol to a Danger or Warning safety label indicates that an electrical hazard exists which will result in personal injury if the instructions are not followed.

This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

⚠ DANGER

DANGER indicates an imminently hazardous situation which, if not avoided, **will result in** death or serious injury.

⚠ WARNING

WARNING indicates a potentially hazardous situation which, if not avoided, **can result in** death or serious injury.

⚠ CAUTION

CAUTION indicates a potentially hazardous situation which, if not avoided, **can result in** minor or moderate injury.

NOTICE

NOTICE addresses practices not related to physical injury including certain environmental hazards, potential damage or loss of data.

General Information

Overview

This manual provides information on accessories available with Uniflair™ LE cooling units. It supplies general information, safety instructions, installation information, and setup information.

The descriptions and illustrations in this manual are owned by Schneider Electric. Schneider Electric reserves the right to make any alterations it sees fit in order to improve the product without having to update this document.

The illustrations and images in this manual are examples only and may differ from your model or environment.

Companion Manuals

For more information about Uniflair units, refer to the following documentation:

- *Uniflair LE Chilled Water HDCV 4500/5000 Operation and Maintenance Manual*
- *Uniflair LE DX Operation and Maintenance Manual*
- *Uniflair LE Chilled Water HDCV 4500/5000 Installation Manual*
- *Uniflair LE DX Installation Manual*

Uniflair Floorstands

⚠ WARNING

HAZARD FROM MOVING PARTS

Keep hands, clothing, and jewelry away from moving parts. Check the equipment for foreign objects before closing the doors and starting the equipment.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

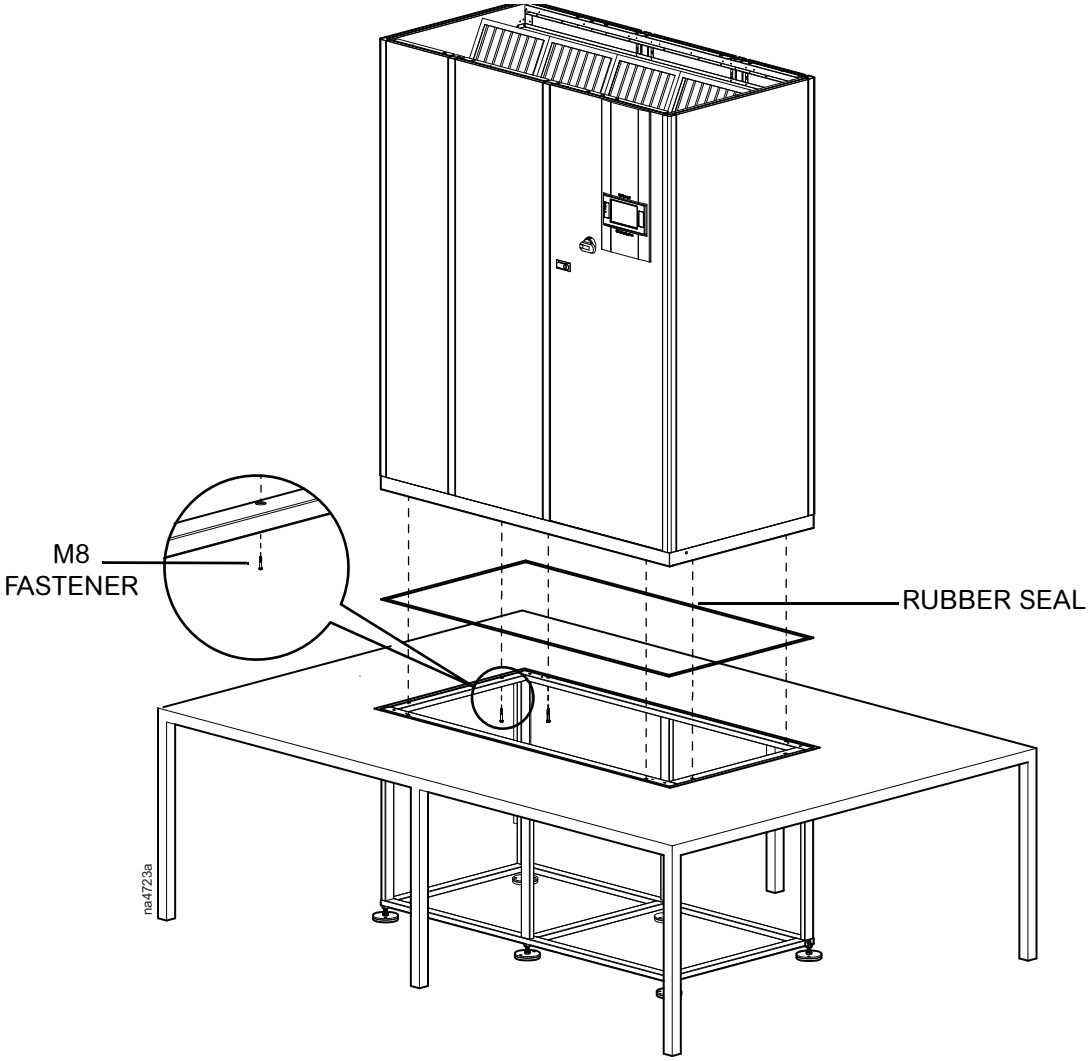
⚠ CAUTION

DAMAGE TO EQUIPMENT OR PERSONNEL

The equipment is heavy and can easily be tipped. For safety purposes, adequate personnel must be present when moving this equipment.

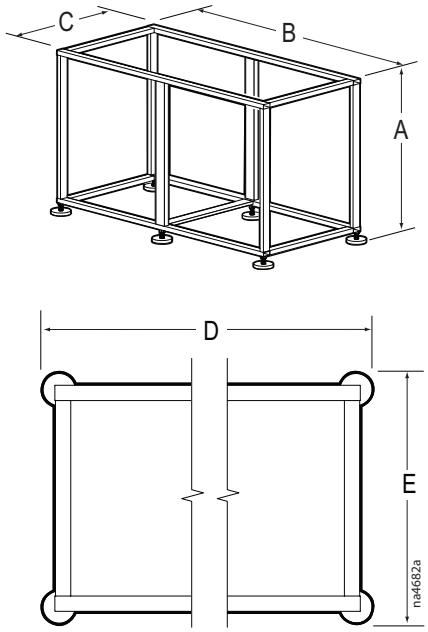
Failure to follow these instructions can result in injury or equipment damage.

36-in. Welded Frame



NOTE: For installation on a raised floor, install a flexible seal (field supplied) at least 5.59 mm (0.2 in.) thick between the raised floor and frame.

NOTE: Rubber, vibration isolation pads are field supplied.



The following table provides frame size, model, and fastener details for the 36-in. welded frame.

Model	Frame Size	Dimensions mm (in.)					Number of M8 fasteners
		A	B	C	D	E	
ACFS76055	3	914 (36)	1 000 (39.37)	740 (29.13)	1 077 (42.40)	817 (32.17)	4
ACFS76056	4	914 (36)	1 300 (51.18)	855 (33.66)	1 377 (54.21)	932 (36.73)	4
ACFS76057	5	914 (36)	1 710 (67.32)	855 (33.66)	1 786 (70.35)	932 (36.73)	4
ACFS76058	6	914 (36)	2 160 (85.04)	855 (33.66)	2 221 (88.11)	932 (36.73)	6
ACFS76059	7	914 (36)	2 572 (101.26)	855 (33.66)	2 631 (104.25)	932 (36.73)	8

12-in.,18-in., 24-in., 36-in., Seismic Frame

⚠WARNING

HEAVY EQUIPMENT

Use at least two people when handling and installing this equipment.

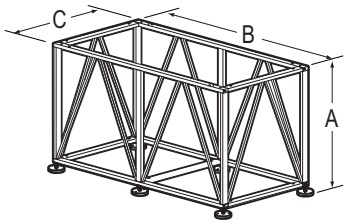
Failure to follow these instructions can result in death, serious injury, or equipment damage.

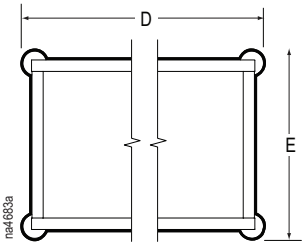
⚠CAUTION

DAMAGE TO EQUIPMENT OR PERSONNEL

This equipment is heavy and can easily be tipped. For safety purposes, adequate personnel must be present when moving this equipment.

Failure to follow these instructions can result in injury or equipment damage.





The following tables provide frame size, model, and fastener details for the 12-in.,18-in., 24-in., and 36-in. seismic frames.

Model	Frame Size	Dimensions mm (in.)					Number of M8 fasteners
		A	B	C	D	E	
ACFS76060 ACFS76065 ACFS76070 ACFS76075	3	305 (12) 457 (18) 610 (24) 914 (36)	1 000 (39.37)	740 (29.13)	1 060 (41.73)	800 (31.50)	4
ACFS76061 ACFS76066 ACFS76071 ACFS76076	4	305 (12) 457 (18) 610 (24) 914 (36)	1, 300 (51.18)	855 (33.66)	1 360 (53.54)	916 (36.06)	4
ACFS76062 ACFS76067 ACFS76072 ACFS76077	5	305 (12) 457 (18) 610 (24) 914 (36)	1 710 (67.32)	855 (33.66)	1 770 (69.69)	916 (36.06)	4

Model	Frame Size	Dimensions mm (in.)					Number of M8 fasteners
		A	B	C	D	E	
ACFS76063 ACFS76068 ACFS76073 ACFS76078	6	305 (12) 457 (18) 610 (24) 914 (36)	2 160 (85.04)	855 (33.66)	2 221 (87.44)	916 (36.06)	6
ACFS76064 ACFS76069 ACFS76074 ACFS76079	7	305 (12) 457 (18) 610 (24) 914 (36)	2 572 (101.26)	855 (33.66)	2 631 (103.58)	916 (36.06)	8

Seismic analysis of Uniflair floor stands

A structural analysis model was created for each of the frames for the Uniflair seismic floor stands, to verify that the frames are adequate for the highest seismic forces (S_{DS}=2.5g). The reactions from the analyses were used to calculate the maximum S_{DS} of the frame base assemblies.

For each frame type, the baseplate, welded bolt and nut, welds, and anchorage to the structure were evaluated to determine the maximum S_{DS} of the base assembly. The anchorage of the baseplate to the structure was assumed to be 2.5 in. HILTI Kwikbolt TZ expansion anchors with 2-in. embedment into a 4-in. thick normal weight concrete slab with the strength of fc'=4000 psi using the attached base plate. The results of the analysis are provided in the following table.

Model	S_{DS} of Frame	S_{DS} of Base Assembly
ACFS76060 ACFS76065 ACFS76070 ACFS76075	2.5 g	2.5 g
ACFS76061 ACFS76066 ACFS76071 ACFS76076	2.5 g	2.5 g
ACFS76062 ACFS76067 ACFS76072 ACFS76077	2.5 g	2.5 g
ACFS76063 ACFS76068 ACFS76073 ACFS76078	2.5 g	2.5 g
ACFS76064 ACFS76069 ACFS76074 ACFS76079	2.5 g	2.5 g

Uniflair Plenums

⚠WARNING

HEAVY EQUIPMENT

Use at least two people when handling and installing this equipment.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

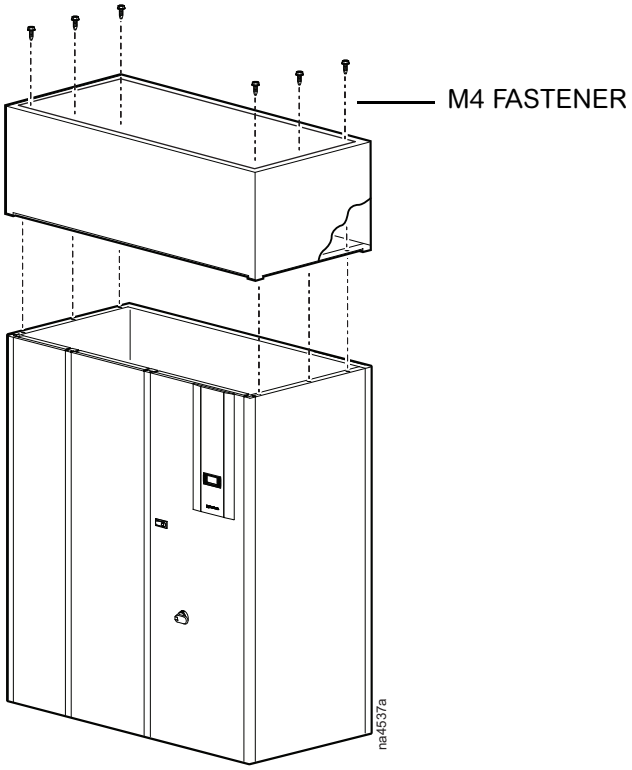
⚠CAUTION

TIP HAZARD

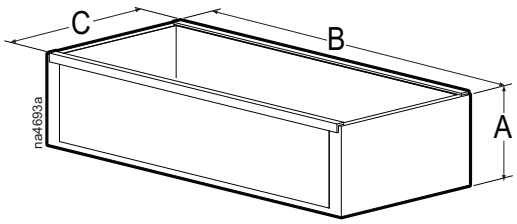
The equipment is heavy and can easily be tipped. For safety purposes, adequate personnel must be present when moving this equipment.

Failure to follow these instructions can result in injury or equipment damage.

20-in. Return Plenum (Non-Stackable)



NOTE: Fasteners are field supplied.



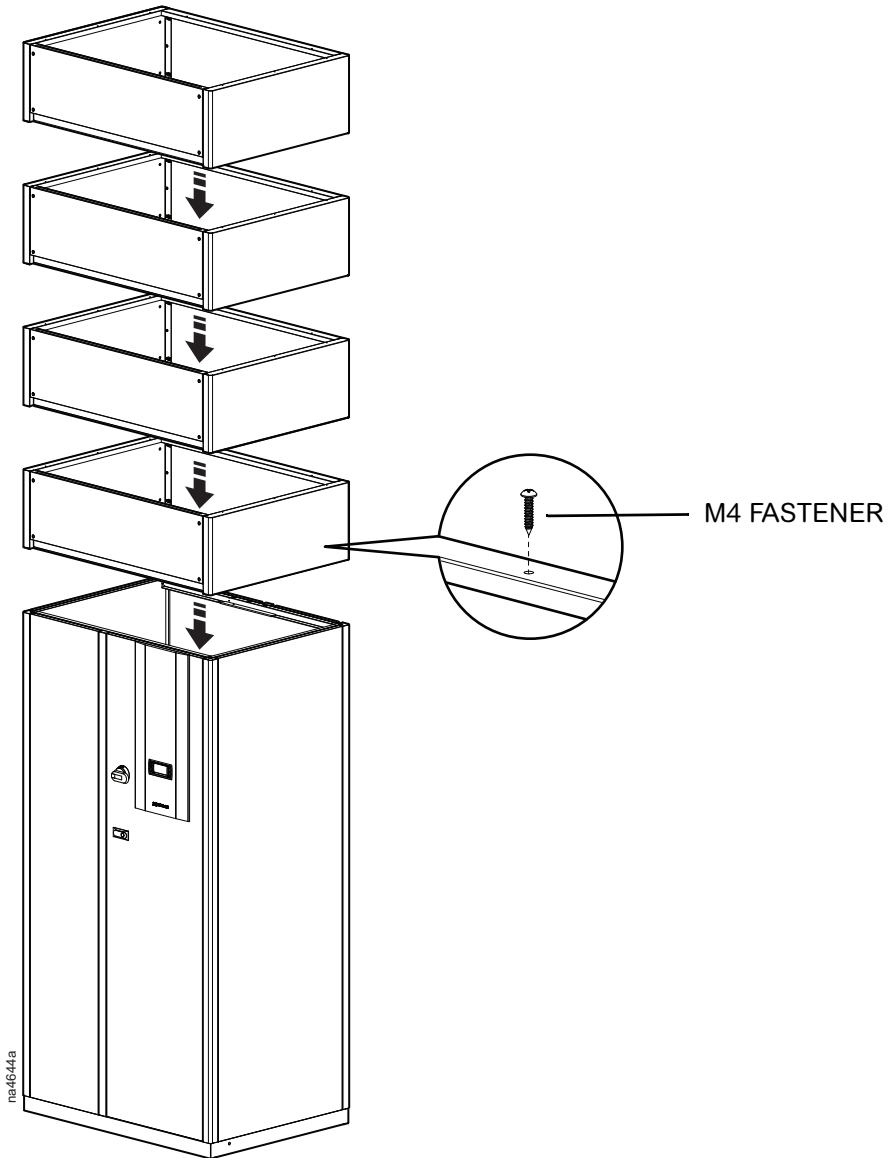
The following table provides frame size and model details for the Uniflair plenums.

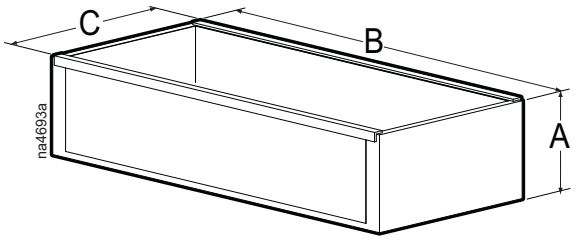
Type of Plenum	Model	Color	Frame Size	Dimensions mm (in.)			Net Weight kg (lb)
				A	B	C	
Top discharge or return plenum 500 mm (20-in.)	ACPL75110 ACPL75130 ACPL75131 ACPL75132	Blue White Gray Black	3	500 (19.69)	1 010 (39.76)	750 (29.53)	37.00 (81.57)
	ACPL75111 ACPL75133 ACPL75134 ACPL75135	Blue White Gray Black	4	500 (19.69)	1 310 (51.57)	865 (34.06)	45.00 (99.21)
	ACPL75112 ACPL75136 ACPL75137 ACPL75138	Blue White Gray Black	5	500 (19.69)	1 720 (67.72)	865 (34.06)	53.50 (117.95)
	ACPL75113 ACPL75139 ACPL75140 ACPL75141	Blue White Gray Black	6	500 (19.69)	2 170 (85.43)	865 (34.06)	62.00 (136.70)
	ACPL75114 ACPL75142 ACPL75143 ACPL75144	Blue White Gray Black	7	500 (19.69)	2 582 (101.65)	865 (34.06)	70.00 (154.30)

12-in. Plenum (Stackable Up To 48-in.)

Up to four 12-in. plenums can be stacked together.

NOTE: Fasteners are field supplied.

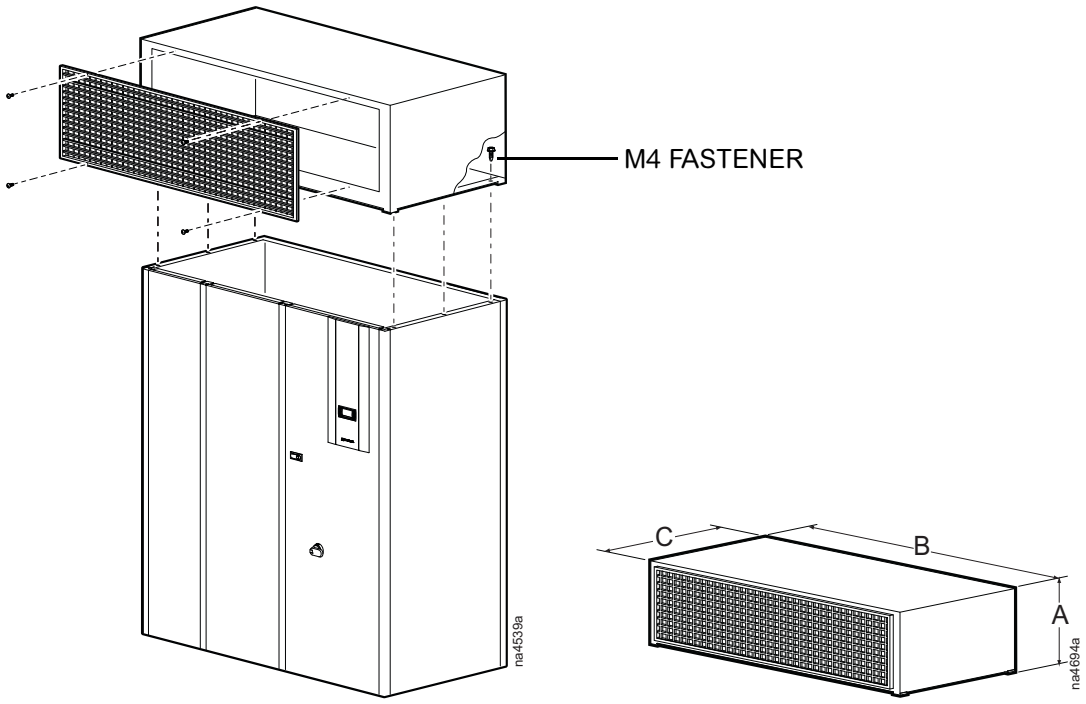




The following table provides frame size, model, and fastener details for 12-in. plenums (stackable up to 1219.2 mm (48 in.).

Type of Plenum	Model	Color	Frame Size	Dimensions mm (in.)			Net Weight kg (lb)	Number of M4 fasteners
				A	B	C		
Uniflair return or supply plenum 305 mm (12 in.) stackable	ACPL75150 ACPL75151 ACPL75152 ACPL75153	Blue White Gray Black	3	305 (12.00)	1 010 (39.76)	750 (29.53)	20.0 (44.10)	0
	ACPL75154 ACPL75155 ACPL75156 ACPL75157	Blue White Gray Black	4	305 (12.00)	1 310 (51.57)	865 (34.06)	23 (50.70)	2
	ACPL75158 ACPL75159 ACPL75160 ACPL75161	Blue White Gray Black	5	305 (12.00)	1 720 (67.72)	865 (34.06)	27 (59.53)	4
	ACPL75162 ACPL75163 ACPL75164 ACPL75165	Blue White Gray Black	6	305 (12.00)	2 170 (85.43)	865 (34.06)	32 (70.54)	4
	ACPL75166 ACPL75167 ACPL75168 ACPL75169	Blue White Gray Black	7	305 (12.00)	2 582 (101.65)	865 (34.06)	36 (79.36)	4

20-in. Front Supply Plenum w/ Grille



The following table provides frame size and model details for the 20-in. front supply plenum w/grille.

Type of Plenum	Model	Color	Frame Size	Dimensions mm (in.)			Net Weight kg (lb)
				A	B	C	
Front supply plenum 500 mm (20 in.)	ACPL75105 ACPL75115 ACPL75116 ACPL75117	Blue White Gray Black	3	500 (19.69)	1 000 (39.37)	740 (29.13)	38.00 (83.78)
	ACPL75106 ACPL75118 ACPL75119 ACPL75120	Blue Gray White Black	4	500 (19.69)	1 300 (51.18)	855 (33.66)	50.00 (110.20)
	ACPL75107 ACPL75121 ACPL75122 ACPL75123	Blue Gray White Black	5	500 (19.69)	1 710 (67.32)	855 (33.66)	59.00 (130.10)
	ACPL75108 ACPL75124 ACPL75125 ACPL75126	Blue Gray White Black	6	500 (19.69)	2 160 (85.04)	855 (33.66)	74.00 (163.10)
	ACPL75109 ACPL75127 ACPL75128 ACPL75129	Blue Gray White Black	7	500 (19.69)	2 572 (101.26)	855 (33.66)	87.00 (191.80)

Uniflair Sub-Bases

⚠WARNING

HEAVY EQUIPMENT

Use at least two people when handling and installing this equipment.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

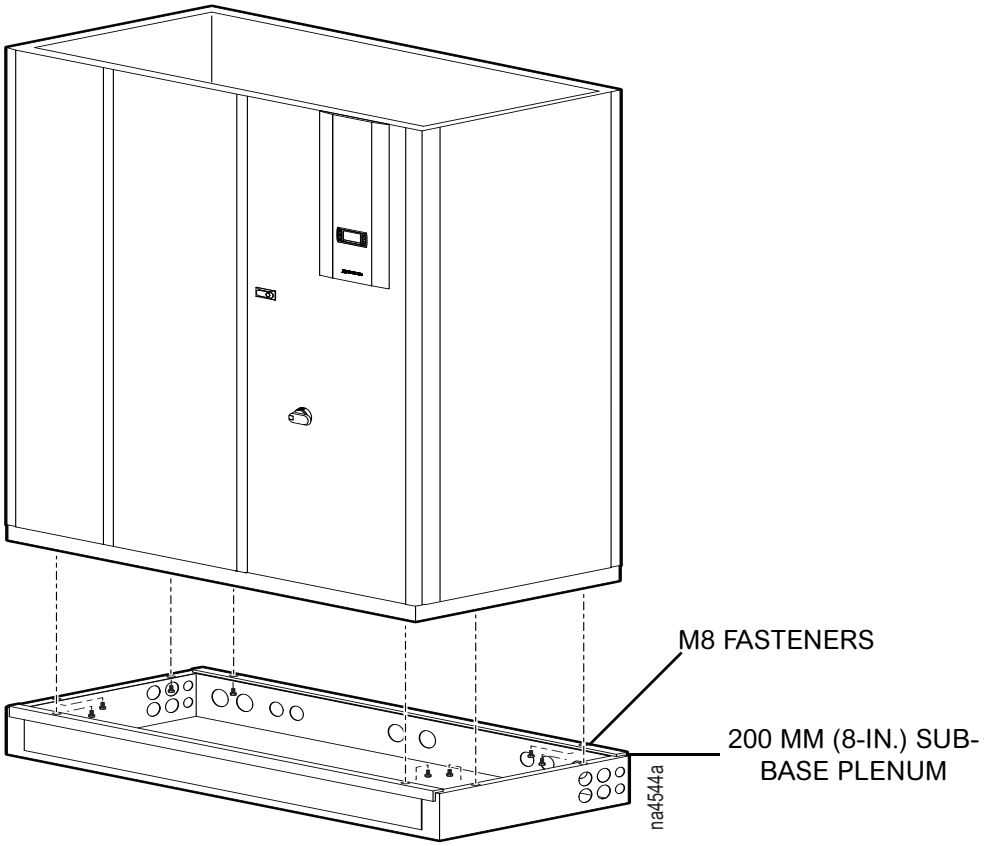
⚠CAUTION

TIP HAZARD

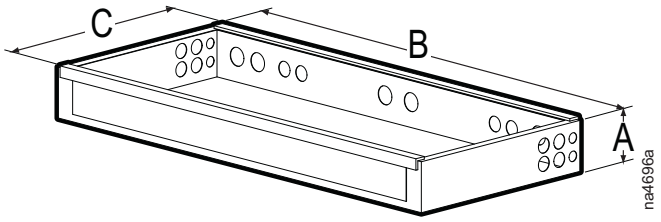
The equipment is heavy and can easily be tipped. For safety purposes, adequate personnel must be present when moving this equipment.

Failure to follow these instructions can result in injury of equipment damage.

8-in. Sub-Base for Piping



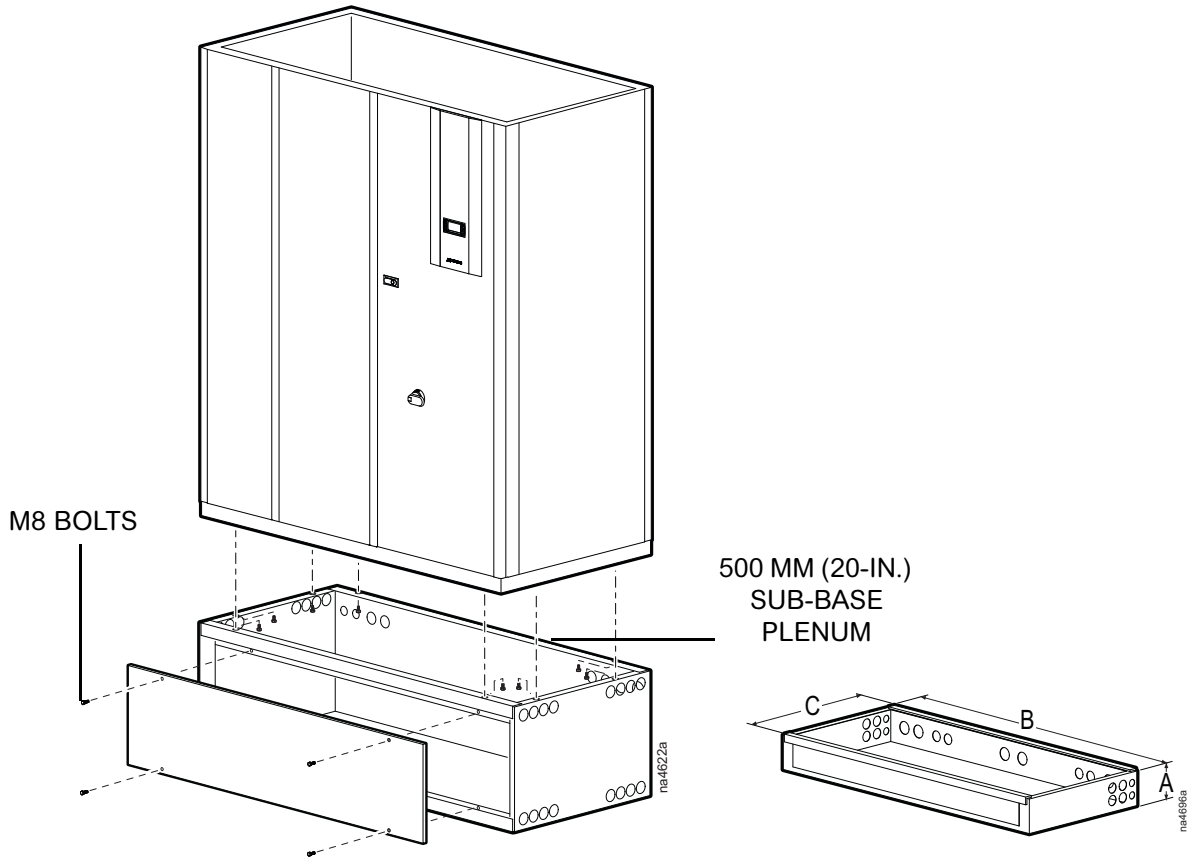
NOTE: Fasteners and vibration pads are field supplied.



The following tables provide frame size, model, and fastener numbers for the 8-in. sub-base for piping.

Type of Plenum	Model	Color	Frame Size	Dimensions mm (in.)			Net Weight kg (lb)	Number of M8 fasteners
				A	B	C		
Sub-base plenum 200 mm (8 in.)	ACSB76140 ACSB76150 ACSB76151 ACSB76152	Blue White Gray Black	3	200 (7.87)	1 000 (39.37)	740 (29.13)	17.70 (39.02)	4
	ACSB76142 ACSB76153 ACSB76154 ACSB76155	Blue White Gray Black	4	200 (7.87)	1 300 (51.18)	855 (33.66)	21.80 (48.06)	4
	ACSB76142 ACSB76156 ACSB76157 ACSB76158	Blue White Gray Black	5	200 (7.87)	1 710 (67.32)	855 (33.66)	27.20 (59.97)	4
	ACSB76143 ACSB76159 ACSB76160 ACSB76161	Blue White Gray Black	6	200 (7.87)	2 160 (85.04)	855 (33.66)	31.60 (69.67)	6
	ACSB76144 ACSB76162 ACSB76163 ACSB76164	Blue White Gray Black	7	200 (7.87)	2 572 (101.26)	855 (33.66)	35.60 (74.49)	8

20-in. Sub-Base for Piping

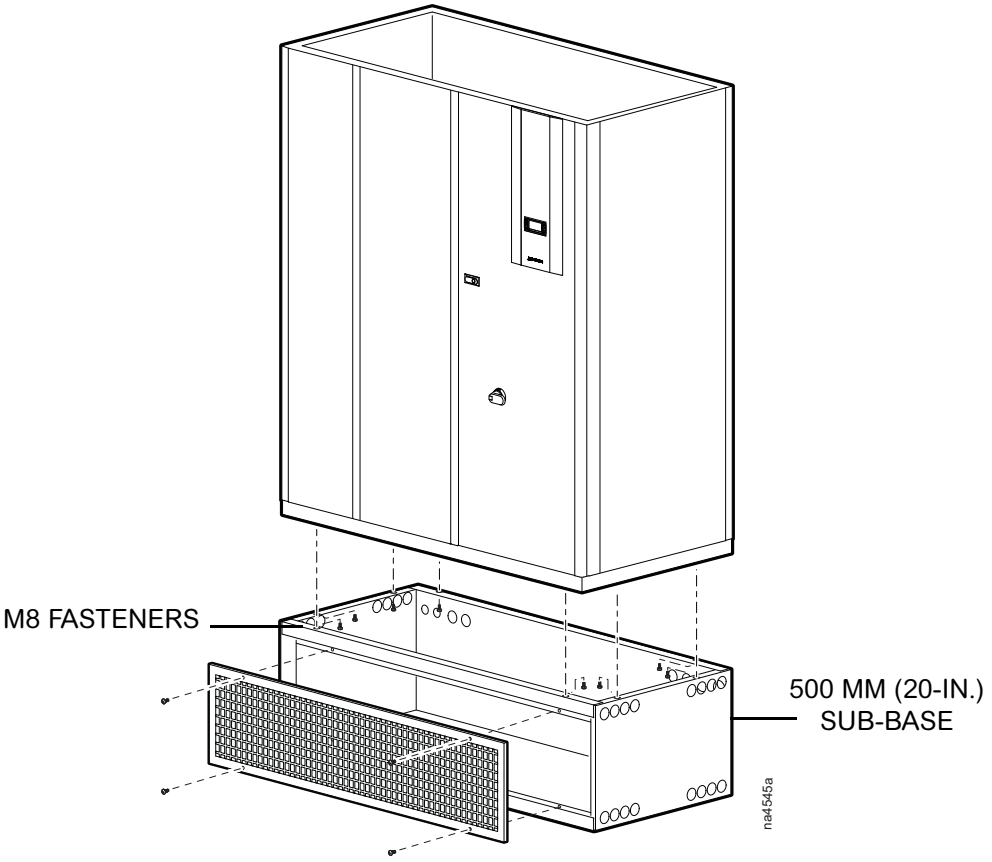


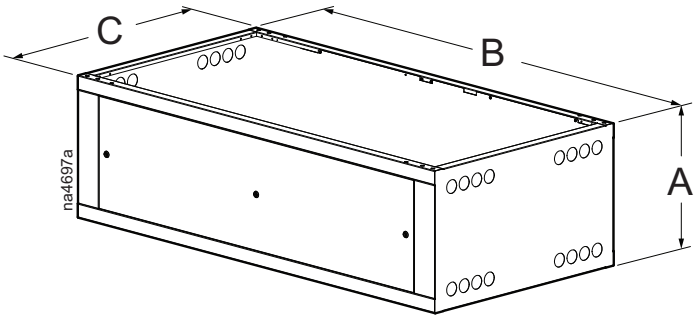
NOTE: Vibration pads and fasteners are field supplied.

The following tables provide frame size and model details for the 500 mm (20-in.) sub-base for piping.

Type of Sub-Base	Model	Color	Frame Size	Dimensions mm (in.)			Net Weight kg (lb)
Uniflair sub-base 500 mm (20-in.) no grille	ACSB76180 ACSB76181 ACSB76182 ACSB76183	Blue White Gray Black	3	500 (19.69)	1 000 (39.37)	740 (29.13)	41 (90.38)
	ACSB76184 ACSB76185 ACSB76186 ACSB76187	Blue White Gray Black	4	500 (19.69)	1 300 (51.18)	855 (33.66)	53 (116.86)
	ACSB76188 ACSB76189 ACSB76190 ACSB76191	Blue White Gray Black	5	500 (19.69)	1 710 (67.32)	855 (33.66)	62 (136.687)
	ACSB76192 ACSB76193 ACSB76194 ACSB76195	Blue White Gray Black	6	500 (19.69	2 160 (85.04)	855 (33.66)	77 (169.76)
	ACSB76196 ACSB76197 ACSB76198 ACSB76199	Blue White Gray Black	7	500 (19.69)	2 572 (101.26)	855 (33.66)	90 (198.42)

20-in. Sub-Base (Front Supply w/ Grille)





NOTE: Vibration pads and fasteners are field supplied.The following table provides frame size, model, and fastener details for the 20-in. sub-base for piping front supply w/ grille.

Type of Sub-Base	Model	Color	Frame Size	Dimensions mm (in.)			Net Weight kg (lb)	Number of M8 fasteners
Sub-base plenum 500 mm (20-in.) front supply	ACSB76145 ACSB76165 ACSB76166 ACSB76167	Blue White Gray Black	3	500 (19.69)	1 000 (39.37)	740 (29.13)	38.00 (183.78)	4
	ACSB76146 ACSB76168 ACSB76169 ACSB76170	Blue White Gray Black	4	500 (19.69)	1 300 (51.18)	855 (33.66)	50.00 (110.20)	4
	ACSB76147 ACSB76171 ACSB76172 ACSB76173	Blue White Gray Black	5	500 (19.69)	1 710 (67.32)	855 (33.66)	59.00 (130.10)	4
	ACSB76148 ACSB76174 ACSB76175 ACSB76176	Blue White Gray Black	6	500 (19.69)	2 160 (85.04)	855 (33.66)	74.00 (163.10)	6
	ACSB76149 ACSB76177 ACSB76178 ACSB76179	Blue White Gray Black	7	500 (19.69)	2,572 (101.26)	855 (33.66)	87.00 (191.80)	8

Damper Utilization

⚠WARNING
HEAVY EQUIPMENT Use at least two people when handling and installing this equipment. **Failure to follow these instructions can result in death, serious injury, or equipment damage.**

⚠CAUTION
TIP HAZARD The equipment is heavy and can easily be tipped. For safety purposes, adequate personnel must be present when moving this equipment. **Failure to follow these instructions can result in injury or equipment damage.**

Overview

Schneider Electric offers the following types of dampers:

- Motorized Damper
- Gravity Damper

Dampers are factory installed on top of the unit.

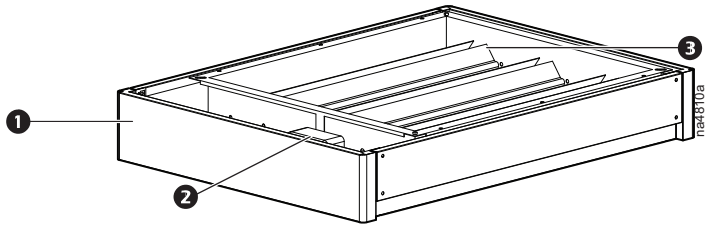
NOTE: Dampers can be field installed by special order. Contact a Schneider-Electric representative for details.

Air Flow Directions

Air Flow	Damper Type
Downflow	Motorized
Upflow	Gravity, motorized

Motorized Damper

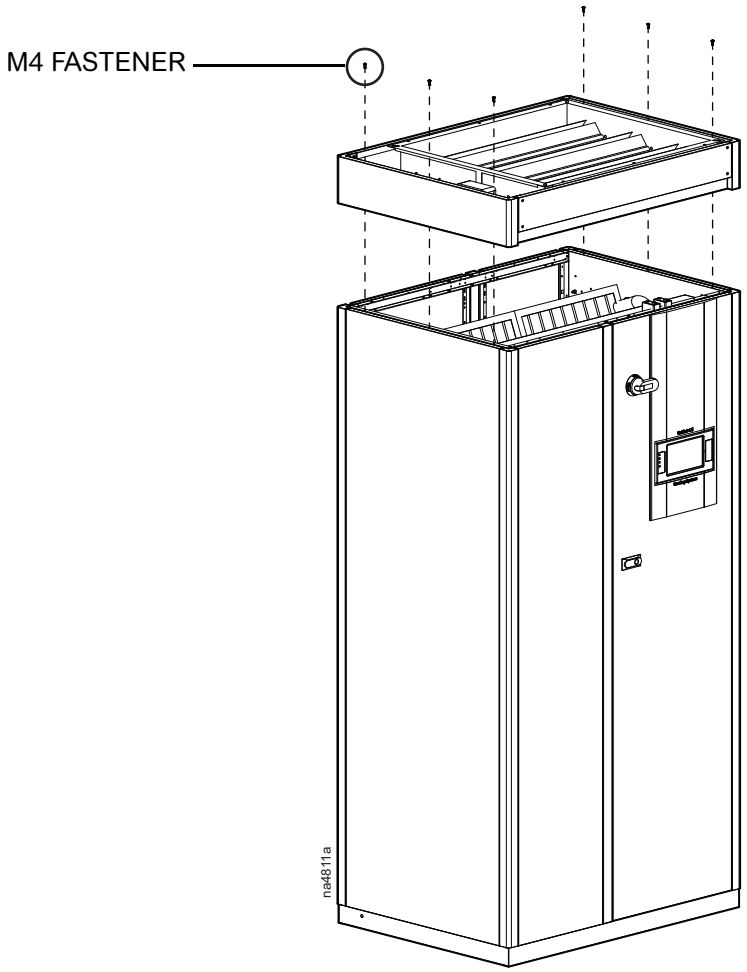
Inventory



Item	Description	Quantity
❶	6-in. damper plenum	1

Item	Description	Quantity
❷	Damper motor	1
❸	Damper	1

Installation



Configuration

⚠ ⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

Turn off all power supplying this equipment before working on the equipment. All electrical work must be performed by licensed electricians. Practice Lockout/Tagout procedures. Do not wear jewelry when working with electrical equipment.

Failure to follow these instructions will result in death or serious injury.

1. Turn power off to the unit.
2. The following electrical diagrams provide SKU and wiring details to wire the damper to Uniflair Chilled Water and Direct Expansion units.

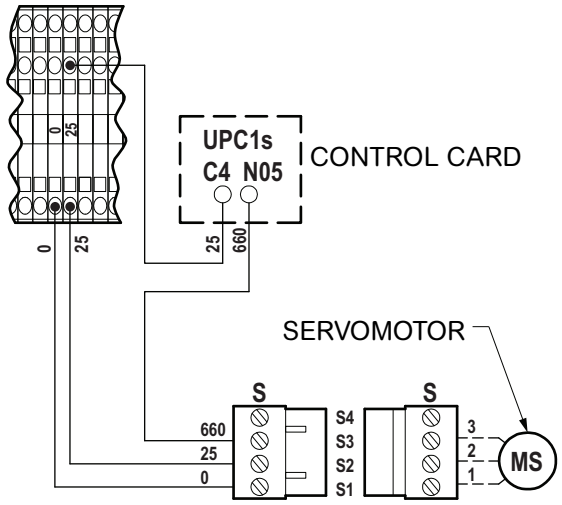
CHILLED WATER

MODEL
TD/UCV 0700
TU/TDC 1000
TU/TDC 1200
TU/TDC 1700
TU/TDC 2500
TU/TDC 3400
TU/TDC 4000
TDCV 4300

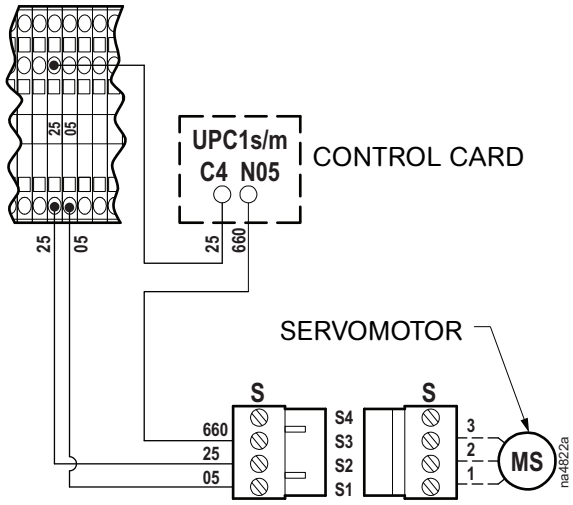
DX (Direct Expansion)

MODEL
TD/UAV 0511-3342
TD/UWV 0511-2842
TD/UEV 0511-2842
TD/UDV 0511-2842
TD/UTV 0511-2842

TERMINAL BLOCK WIRING DIAGRAM



TERMINAL BLOCK WIRING DIAGRAM



NOTE: 0-10v signal (Y4) and 24 V output is available on (D05) and can be provided.

Using the standard LED display

1. Turn power off to the unit and wait for the main screen to appear.
2. Press the **Prg** key.
3. Using the UP or DOWN key, select **SERVICE MENU** and press **ENTER**.
4. Enter the password.

NOTE: The password is found inside the envelope attached to the manual. If the password has been changed, enter the new password instead.

5. Press **ENTER**.
6. Using the UP or DOWN key, select **HARDWARE SETTINGS** and press **ENTER**.
7. Navigate to the ON/OFF MODE screen.

ON/OFF MODE:	
Via Input Contact:	N
Only Via Serial:	N
Motorized Damper:	Y
Opening Time:	120
Mot. Damper Output:	DO5
Output Contact:	N.O.

NOTE: These two settings are not applicable.

8. Press **ENTER** until the cursor is positioned on **MOTORIZED DAMPER**.
9. Select **Yes** and press **ENTER**.
10. The damper default opening time 120 seconds. Adjust if required.
11. Press **ENTER** to move the cursor to the top-left portion of the display.
12. To exit, press the **ESC** key and navigate to the main screen.

Using the touchscreen display

Path: Main > Configuration > Unit > Digital Inputs

1. Turn on the power to the unit and wait for the touchscreen to display.
2. Set the following configurations:

   NOTE: Settings may appear on a different screen.

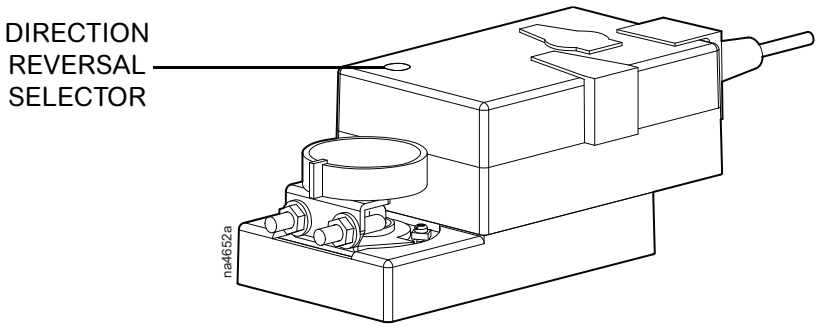
   Motorized Damper: Enabled

   Motorized Damper Opening Time: 120 seconds (suggested setting)

   Motorized Damper Output Contract Normal State: Normally Open

3. Press the **Home** button to return to the main screen.

Use the direction reversal selector located on the servomotor if the rotation is incorrect.



Gravity Damper

⚠WARNING

HEAVY EQUIPMENT

Use at least two people when handling and installing this equipment.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

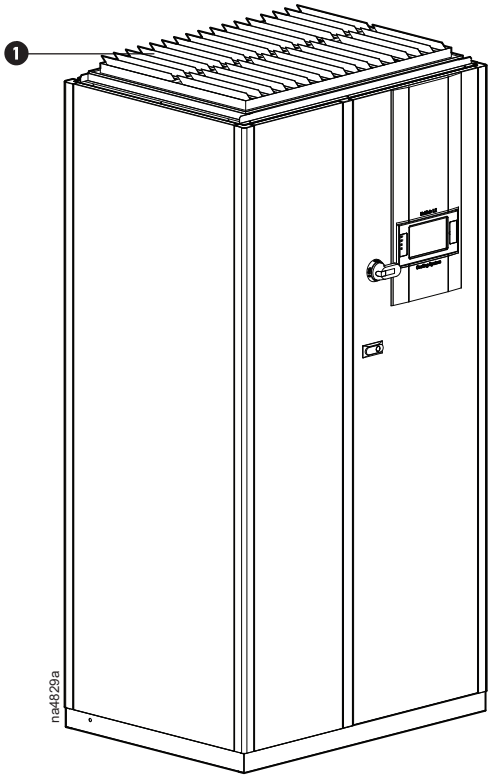
⚠CAUTION

TIP HAZARD

The equipment is heavy and can easily be tipped. For safety purposes, adequate personnel must be present when moving this equipment.

Failure to follow these instructions can result in injury or equipment damage.

Inventory



Item	Description	Quantity
1	Gravity damper	1

Condensate Pumps

Overview

Uniflair condensate removal pumps collect and automatically remove water up to 100°C (212°F). The pump collects water in its integral reservoir. After enough water has been collected, an internal float switch activates the pump and the water is pumped out. Once enough water has been evacuated from the reservoir, the pump automatically deactivates.

Important Safety Information

Read the instructions carefully to become familiar with the equipment before trying to install, operate, service, or maintain it. The following special messages may appear throughout this manual or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.

⚠ ⚠DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- To reduce the risk of electrical shock, this pump must be grounded with a properly wired grounding connection.
- Disconnect electrical power at the power source (fuse box, circuit breaker, etc.) before servicing pump.
- Do not handle the pump with wet hands, while standing on a wet/damp surface, or in water.

Failure to follow these instructions will result in death or serious injury.

NOTICE

FLAMMABLE FLUIDS

The pump should only be used for liquids compatible with pump component materials. Do not use to pump flammable or explosive fluids. Do not use in explosive atmospheres.

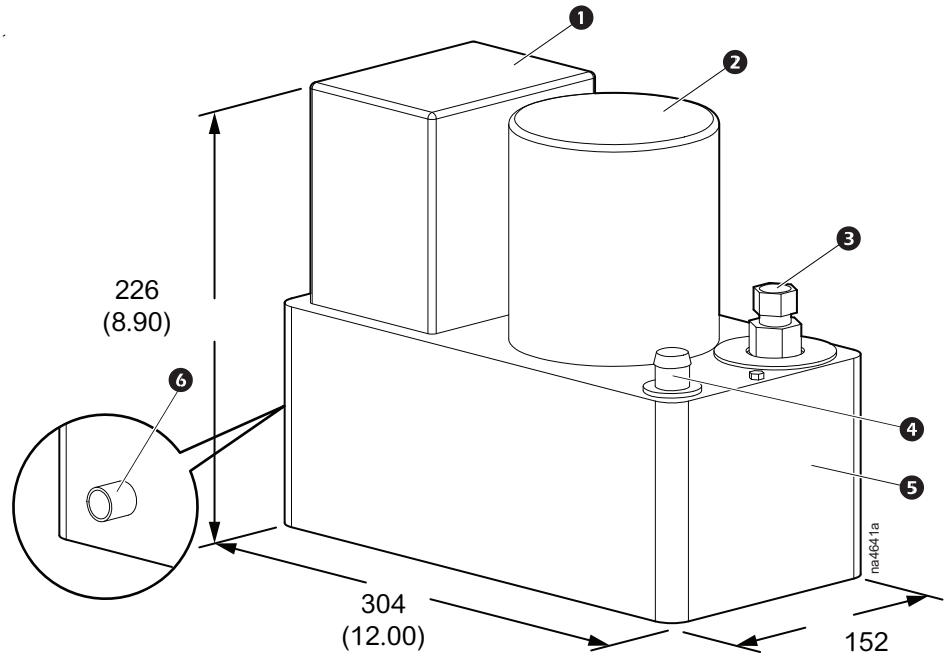
In any installation where property damage and/or injury could occur as a result of an inoperable or leaking pump, a backup system such as high level safety float switch and/or alarm is highly recommended.

Failure to follow these instructions can result in equipment damage.

IMPORTANT: For correct wiring installation, refer to the enclosed wiring diagrams. Make certain that line voltage corresponds to voltage specified on pump motor's nameplate.

IMPORTANT: All wiring must conform to local electrical codes. In areas without local code, the National Electrical Code applies.

Component Identification



*Dimensions shown in mm (in.).

Item	Description
❶	Electrical component cover
❷	Motor (for voltages, see “Pump Models and SKUs” on page 31)
❸	Check valve with 12.7 mm (1/2 in.) copper tubing discharge
❹	Barbed 19 mm (3/4 in.) inlet
❺	Tank
❻	Optional 19.05 mm (3/4 in.) barbed inlet (cover and plug must be removed)

Pump Models and SKUs

The following table provides the model numbers, SKU, installation details of pumps available for Uniflair cooling units, and pump wiring information:

- **External wiring**: External power source. The pump is shipped loose from the factory.
- **Factory installed**: Powered internally by the unit. The pump is factory installed.
- **Internal wiring**: Powered internally by the unit. The pump is shipped loose from the factory.

Pump Model	SKU	Voltage	Wiring		
			CW-TD/UCV	DX	HDCV
A5X-3AP-230	ACAC76129	230	External Wiring 230 V	Internal Wiring	Factory Installed
A5X-3AP-460	ACAC76136	460/575	External Wiring 460 V	Internal Wiring	Factory Installed

Installation

⚠ ⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

Turn off all power supplying this equipment before working on the equipment. All electrical work must be performed by licensed electricians. Practice Lockout/Tagout procedures. Do not wear jewelry when working with electrical equipment.

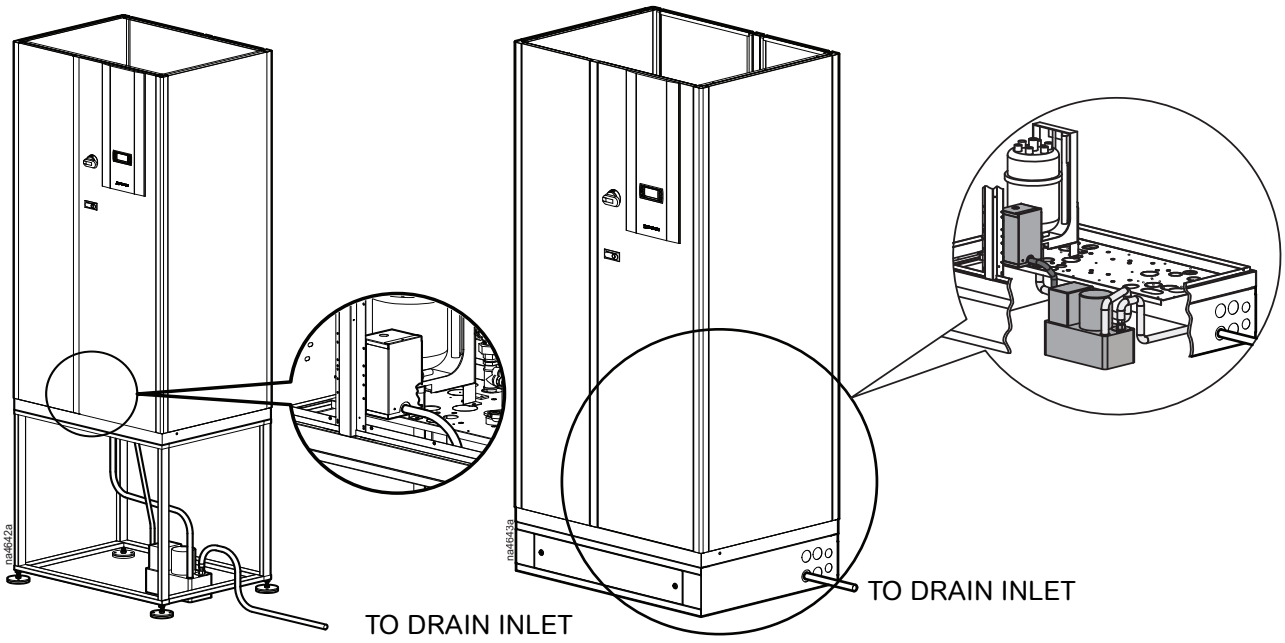
Failure to follow these instructions will result in death or serious injury.

1. Unpack and inspect the pump. If damage is observed, call Schneider-Electric Technical Support. They will assist with repair or replacement.
2. Disconnect the electrical power at the power source (fuse box, circuit breaker, etc.) before wiring the pump or connecting the electrical cord.

Plumbing connections

1. Position the pump so the inlet is close to and below the drain line.

   NOTE: The pump must be level.



2. Install flexible tubing or pipe from the pump to the drain inlet hole. Make sure the pipe does not interfere with the float.

   IMPORTANT: Ensure a downward slope of the line in order to provide proper gravity drainage into the pump.

Wiring connections

⚠ ⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

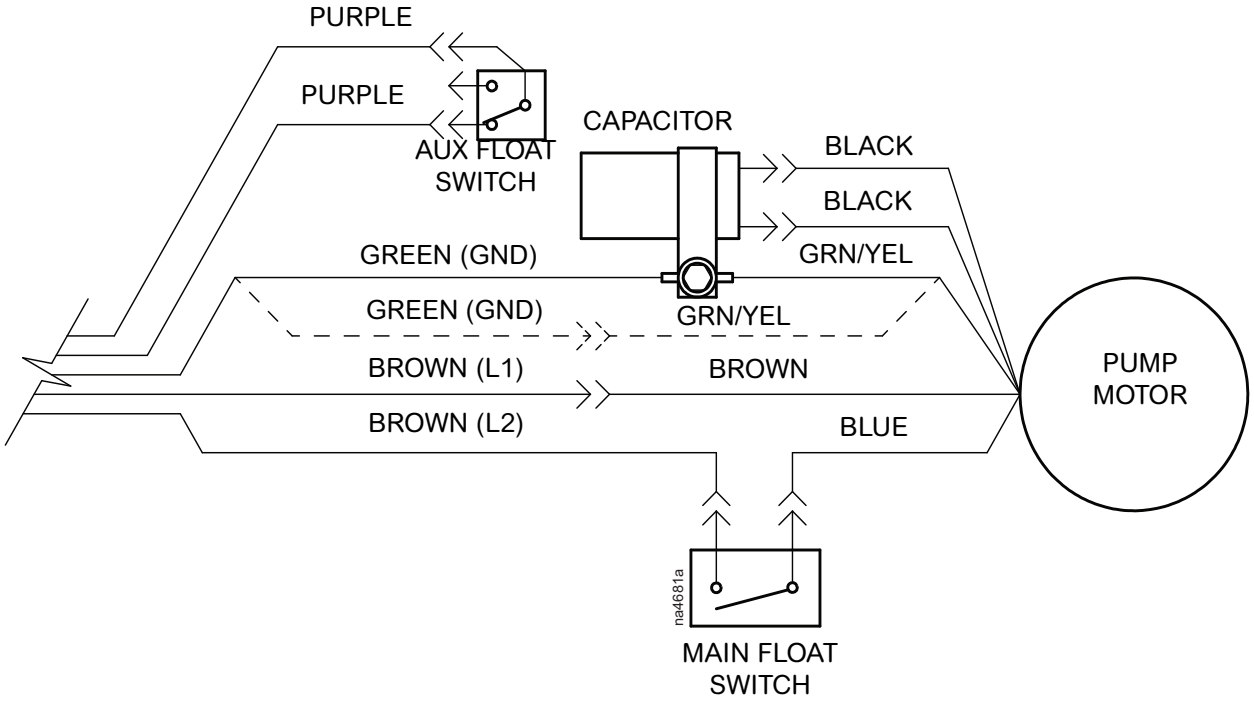
Turn off all power supplying this equipment before working on the equipment. All electrical work must be performed by licensed electricians. Practice Lockout/Tagout procedures. Do not wear jewelry when working with electrical equipment.

Failure to follow these instructions will result in death or serious injury.

IMPORTANT: Connection to an intermittent power source will not allow for proper pump operation.

NOTE: The routing of wires inside the pump is critical. Keep all wires inside the pumps electrical enclosure clear of floats and switch actuation arms.

The following diagram provides a general diagram of wiring to the pump motor to the unit. This diagram is also located inside the cover of the pump. For the DX units, a junction box is provided to wire the cooling unit to the motor.

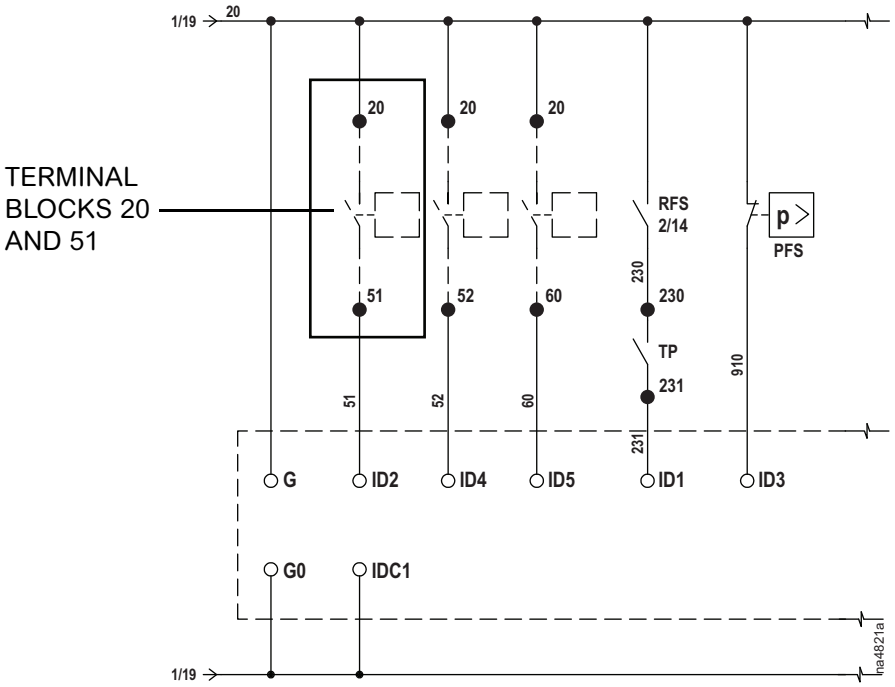


NOTE: Make certain that the line voltage corresponds to the voltage specified on the pump motor nameplate. For proper installation, connect the pump to a constant source of power.

NOTE: Never connect to Digital Input 2 directly. Alway connect to a terminal block in the main electrical box or in the condensate pump electrical box.

Electrical connections to Chilled Water units

1. Disconnect power to the unit.
2. The following electrical diagrams provides connection details to connect the condensate pump to the Uniflair unit for CW-TD/UCV models. Use terminal blocks 20 and 51.



3. Connect the pump high float switch that leads to Digital Input 2 on the Uniflair unit (in series with leak detection if applicable). A high water level condition in the pump reservoir causes a “Flood Alarm” on the Uniflair unit. This alarm can be manually set to shutdown the unit if selected as a second level alarm. The following provides details on configuring the condensate pump to CW-TD/UCV models for Digital Input 2. Use the following settings:

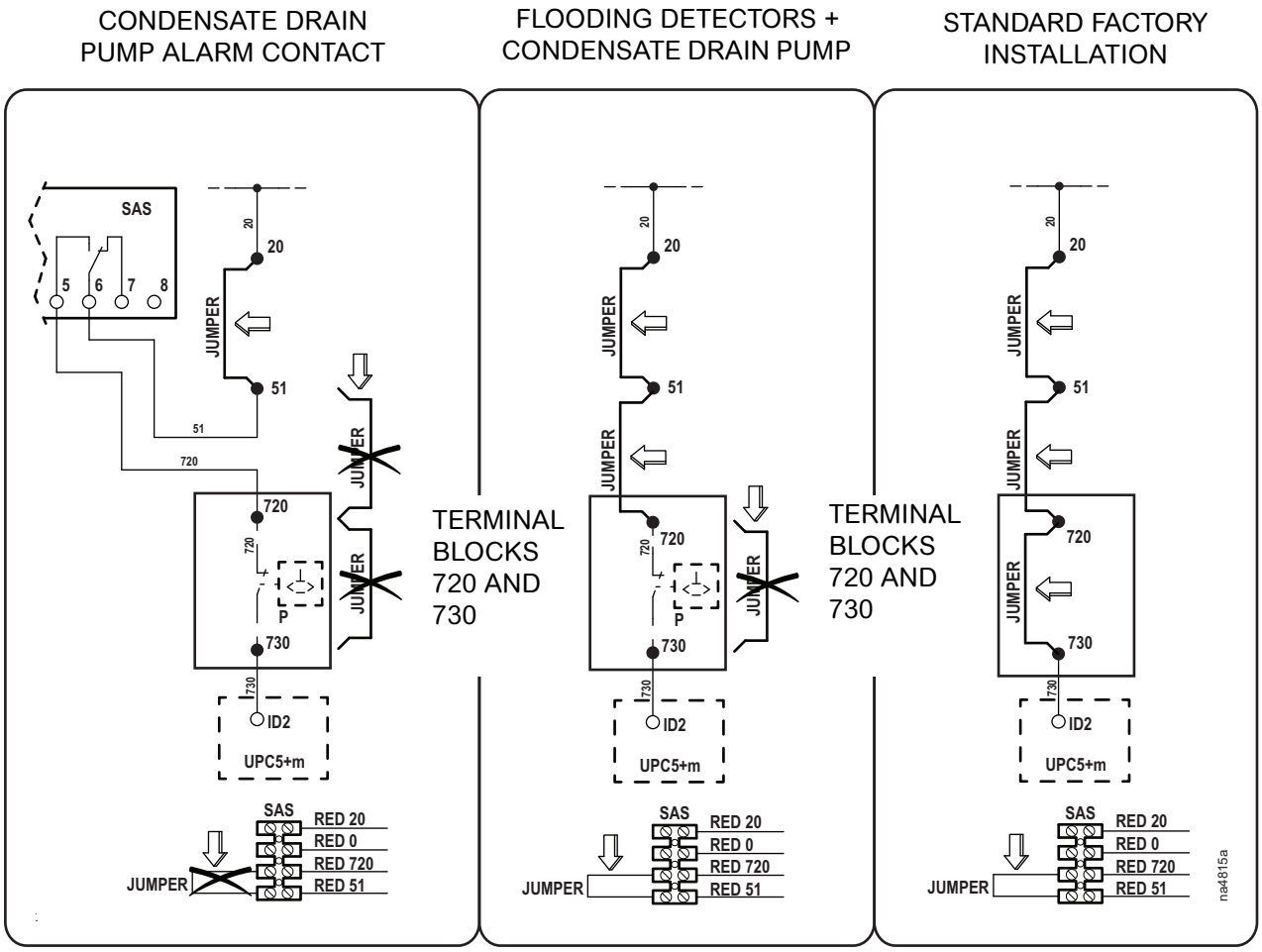
   User

   Remote ON-OFF

   Flooding sensor
4. If removed, replace the electrical component cover.
5. Apply power to the unit. The pump activates when the reservoir fills to the switch activation level.

Electrical connections to Direct Expansion and HDCV units

1. Disconnect power to the unit.
2. The following electrical diagram provides details of connecting the condensate pump to the Uniflair unit. Use terminal blocks 720 and 730.



3. Connect the pump high float switch that leads to Digital Input 2 on the Uniflair unit (in series with leak detection if applicable). A high water level condition in the pump reservoir causes a “Flood Alarm” on the Uniflair unit. This alarm can be manually set to shutdown the unit if selected as a second level alarm.
4. If removed, replace the electrical component cover.
5. Apply power to the unit. The pump activates when the reservoir fills to the switch activation level.

Configuration

Using the LED display

1. Turn on power to the unit and wait for the main screen to appear on the display.
2. Press **Prg**.
3. Select **SERVICE MENU**, then press **ENTER**.

   NOTE: The password is found inside the envelope attached to the manual. If the password has been changed, enter the new password.
4. Press **ENTER.**
5. Select HARDWARE SETTINGS and press **ENTER**.
6. Navigate to “DIGITAL INPUT 2 CONFIGURATION”.
7. Check to ensure the existing setting is not used.
8. Press **ENTER** until the cursor stops under NOT USED.
9. Press **UP** or **DOWN** until “FLOODING SENSOR” appears on the display.
10. Press **ENTER**.
11. To exit, press the **ESC** key and navigate to the main screen.

Using the touchscreen display

Path: Main > Configuration > Unit > Digital Inputs

1. Turn power on to the unit on and wait for the touchscreen to display.
2. Set the following configurations:

   NOTE: Settings may appear on a different screen.

   Digital Input Two Configuration: Water Detection Sensors

   Digital Input 2 Function: Alarm Signaling

   Digital Input 2 Normal State: Normally Open
3. Press the **Home** button to return to the main screen.

Pump test

1. Remove the inlet tubing from the pump.
2. Pour water into the inlet until the pump turns on.
3. The pump will evacuate water, then turn off. It will leave about 19 mm (3/4 in.) of water in the tank after “pump-out” is complete.
4. Reconnect the inlet tubing to the pump.

Operation

After proper installation, the operation of the Uniflair condensate pump is automatic.

Troubleshooting

⚠ ⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

Turn off all power supplying this equipment before working on the equipment. All electrical work must be performed by licensed electricians. Practice Lockout/Tagout procedures. Do not wear jewelry when working with electrical equipment.

Failure to follow these instructions will result in death or serious injury.

Under most circumstances, the pump requires little maintenance for efficient operation. If a problem occurs, check the following items or call Schneider-Electrical Technical Support.

The following guidelines can help to return the pump to service.

- Check inlet and outlet piping for blockage or kinks that inhibits flow.
- Make sure the floats move freely.
- Make sure the pump impeller casing is not clogged
- Make sure the check valve is not clogged.

Pump Does Not Run

- Check to see that the power to the system (Uniflair unit) is on to allow production of condensate.
- Check that the pump is plugged in and the circuit is active (fuse or breaker not blown).
- Check the level of water in the reservoir. The level must be within 50.8 mm (2 in.) of the reservoir top to activate the switch. The inlet tube may be blocked and require cleaning if no water is entering the reservoir.
- If there is a proper amount of water in the reservoir, the float may be stuck due to dirt or algae formation. Flush the reservoir with warm water and a mild soap or detergent.

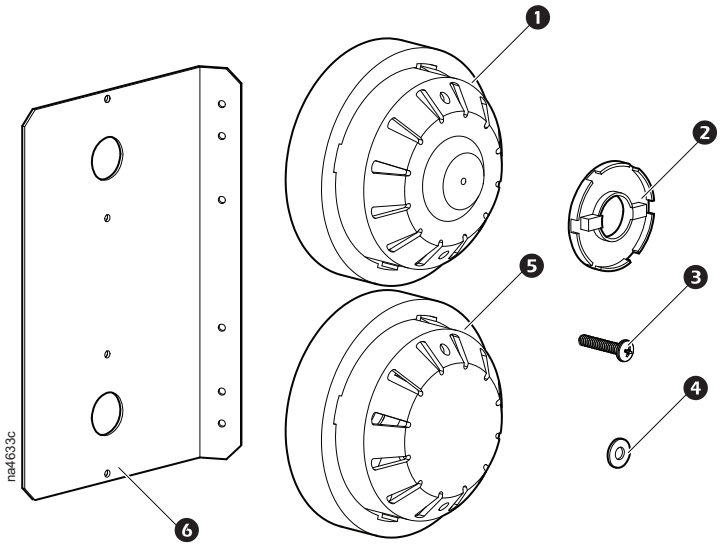
NOTE: In case of extreme algae formation, unplug the pump and fill the reservoir with a commercially available algaecide. Follow the directions for destroying the algae. After the proper waiting period, dump the algaecide out of the reservoir. Rinse with water, repeat if necessary. Be careful not to clog the check valve when starting the pump after cleaning.

Pump Motor Runs With No Discharge

- Inspect the discharge tubing for its full length to make sure it is clear. Check to ensure the tubing end is not clogged.
- Make sure the check valve is not clogged. If clogged, unplug the pump, remove the fitting, and clean with mild soap or detergent.
- The discharge port of the impeller chamber may be clogged due to an accumulation of debris.

Smoke and Fire Sensors

Inventory



Item	Description	Quantity
❶	Smoke sensor (ACAC76115)	1
❷	Rubber grommet	2
❸	Phillips screws	4
❹	Washers	4
❺	Fire sensor (ACAC76116)	1
❻	Metal installation bracket	1

NOTE: Inspect for missing components. If parts are missing, contact Schneider-Electric Technical Support.

Installation

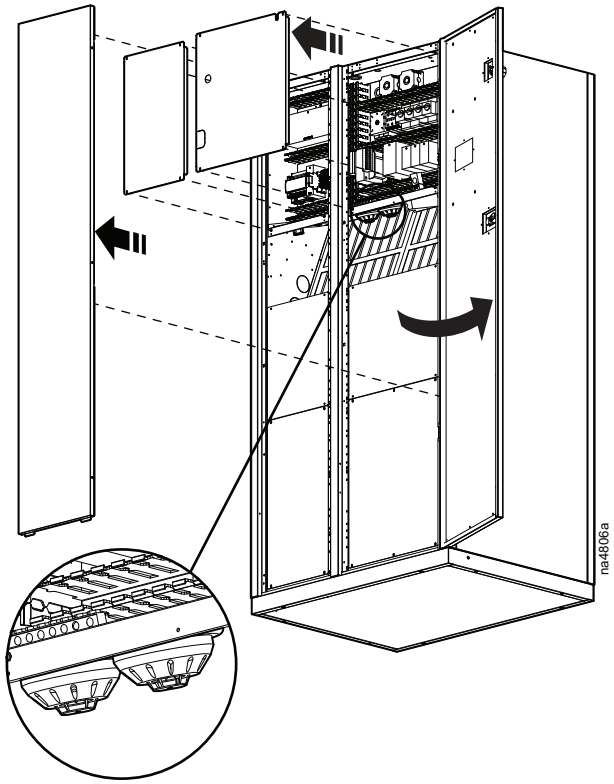
⚠⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

Turn off all power supplying this equipment before working on the equipment. All electrical work must be performed by licensed electricians. Practice Lockout/Tagout procedures. Do not wear jewelry when working with electrical equipment.

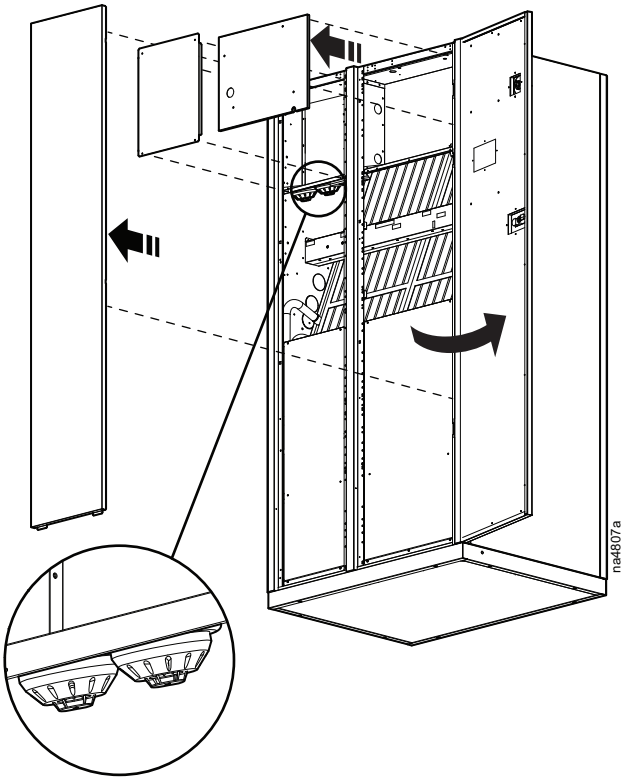
Failure to follow these instructions will result in death or serious injury.

1. Locate the installation location for the sensor based on the unit type and model. The following graphics provide installation locations based on model number.



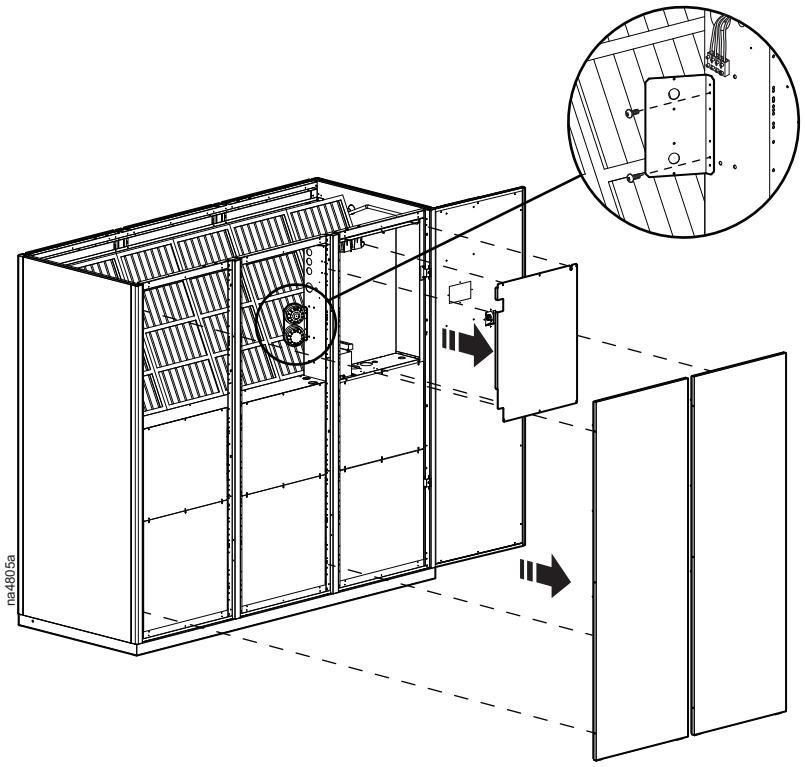
MODEL

TD/UAV 0511 - 0611
TD/UWV 0511 - 0611
TD/UEV 0511 - 0611
TD/UDV 0511 - 0611
TD/UTV 0511 - 0611



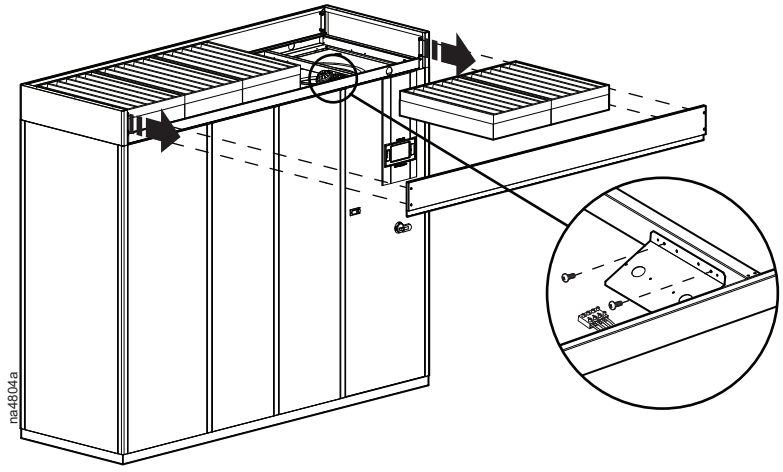
MODEL

TD/UCV 0700



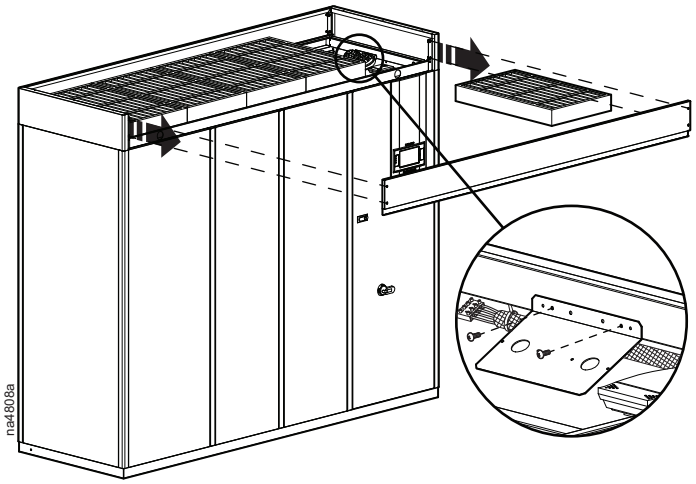
MODEL

TD/UAV 0921 - 1822
TD/UWV 0921 - 1822
TD/UEV 0921 - 1822
TD/UDV 0921 - 1822
TD/UTV 0921 - 1822
TUAV 2242 - 3342
TUWV 2242 - 2842
TUEV 2242 - 2842
TUDV 2242 - 2842
TUTV 2242 - 2842
TD/UCV 1000 - 3400
TDCV 4000



MODEL

TDAV 2242 - 3342
TDWV 2242 - 2842
TDEV 2242 - 2842
TDDV 2242 - 2842
TDTV 2242 - 2842

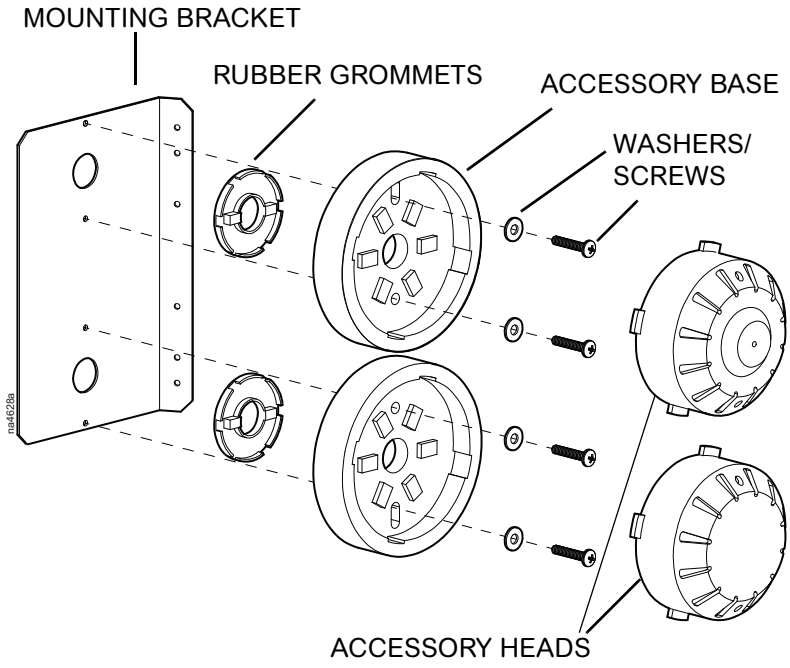


MODEL

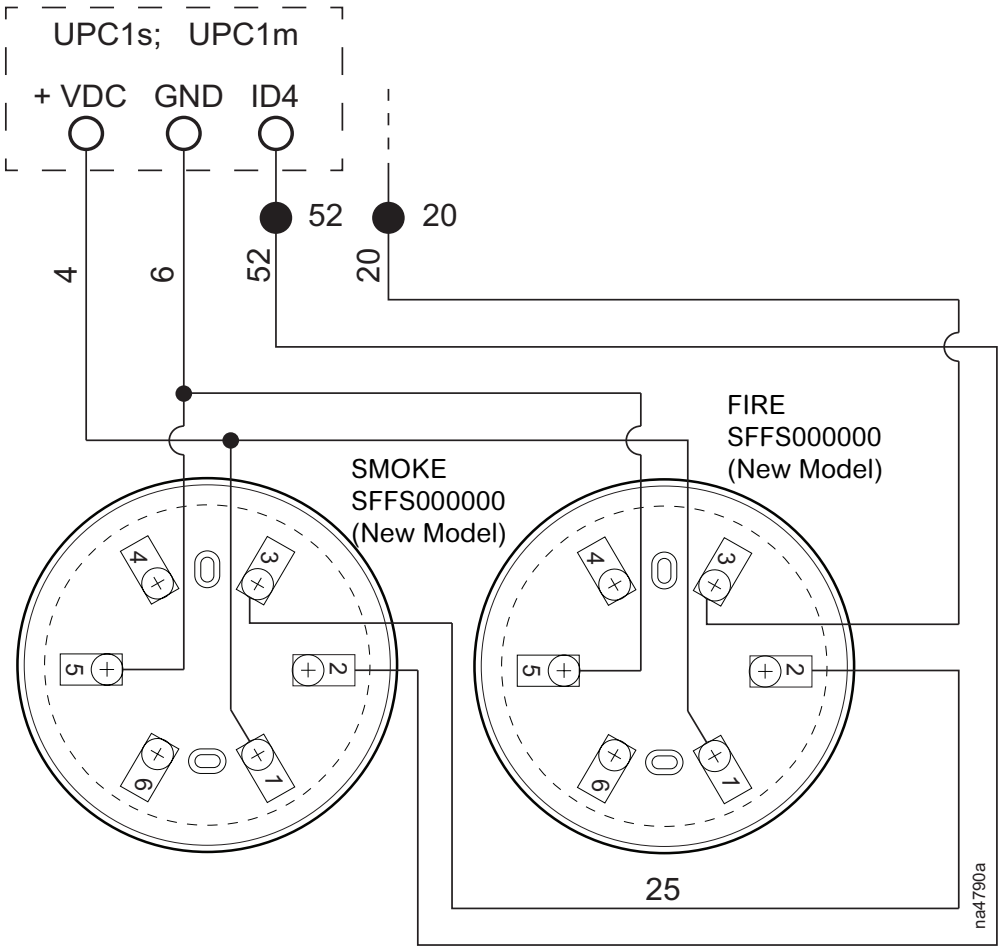
TDCV4300

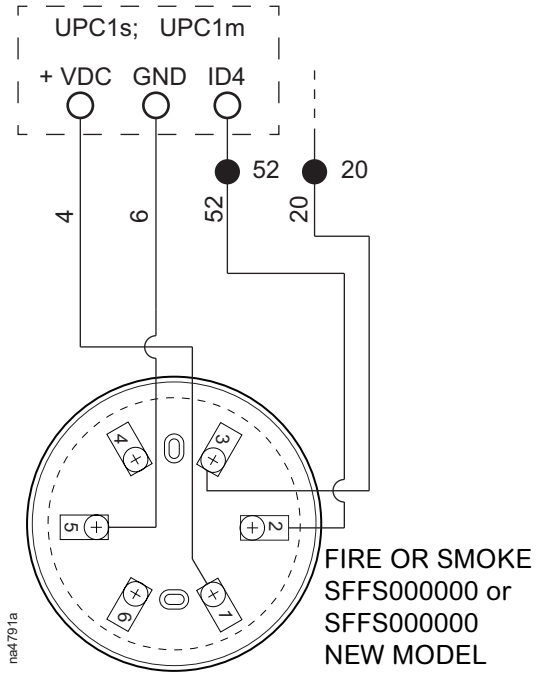
2. Remove any necessary unit paneling and/or filters to access the bracket installation location.
3. Secure the bracket to the proper location with the Phillips screws.

There are two mounting positions: horizontal and vertical.

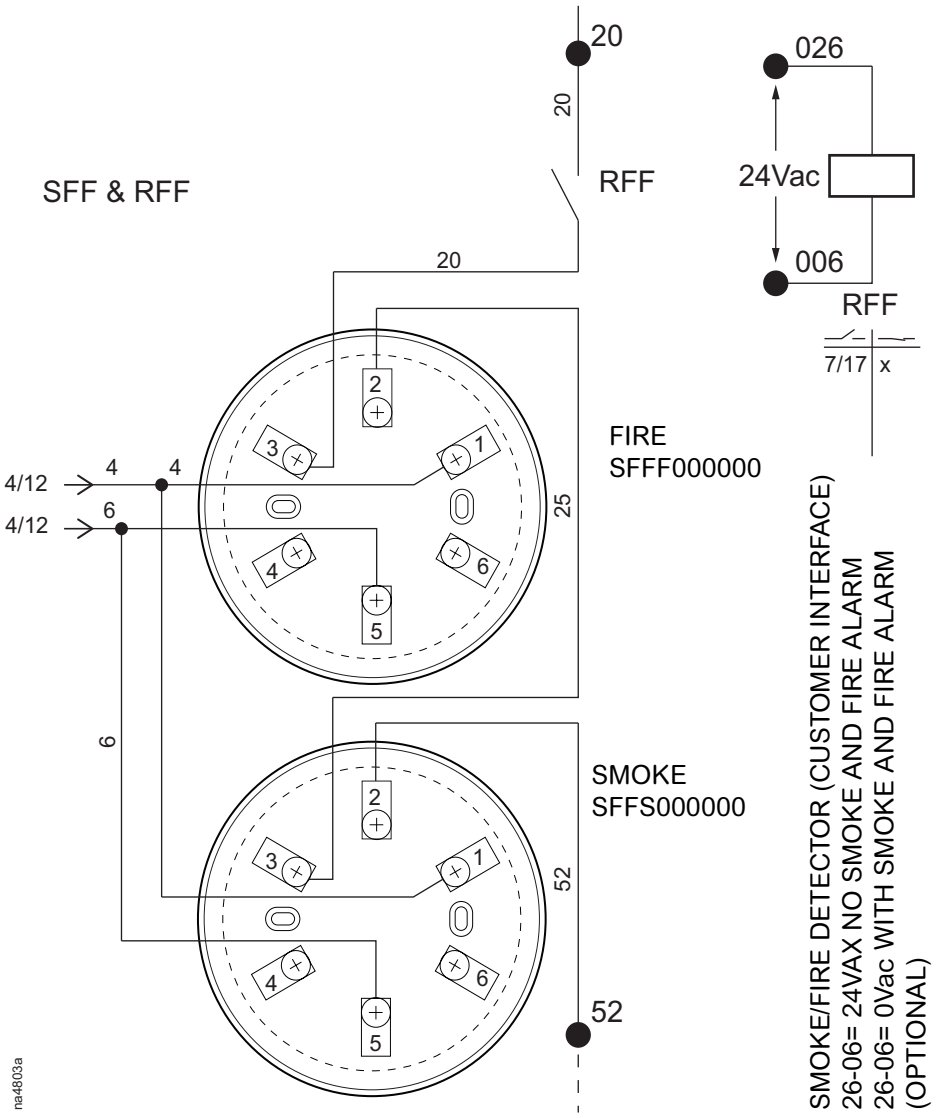


   a. Place rubber grommet inside bracket holes.
   b. Remove the head of the sensor by gently twisting to the left to separate the base.
   c. Secure the base of the sensor using the screws and washers provided.
   d. Screw the head of the accessory back on.
4. Depending on the manufacturing date, the design may be different for each sensor. Locate the proper sensor design in the following wiring diagrams and connect the wires accordingly.


UPC1s; UPC1m
+ VDC
GND
ID4
52
20
4
6
52
20
FIRE
SFFS000000
(New Model)
SMOKE
SFFS000000
(New Model)
25
na4790a


UPC1s; UPC1m
+ VDC
GND
ID4
52
20
4
6
52
20
FIRE OR SMOKE
SFFS000000 or
SFFS000000
NEW MODEL
na4791a

The following graphic provides details to wire the smoke and fire detectors in 24 V series.



5. Locate the terminal connection harness near or close to the recommended installation location.
6. Follow the wiring direction given in wiring diagrams above to match labeled connections (wires not supplied).
7. Once one or both sensors are wired to the terminal, reattach the head of the sensor to the base by turning to the right.

Configuration

Using the LED display

1. Turn on the power to the unit and wait for the main screen to appear on the display.
2. Press **Prg.**
3. Select **SERVICE MENU**, then press **ENTER**.

   NOTE: The password is found inside the envelope attached to the manual. If the password has been changed, enter the new password.

4. Press **ENTER.**
5. Select **HARDWARE SETTINGS** and press **ENTER**.
6. Navigate to “DIGITAL INPUT 4 CONFIGURATION”.
7. Check to ensure the existing setting is not used. If this does not correspond to your settings, whatever function is currently attributed to that digital input of the control will be lost at the end of this procedure and replaced with the one relative to the operation of the fire-smoke sensor.
8. Press **ENTER** until the cursor stops under **NOT USED**.
9. Press **UP** or **DOWN** until “SMOKE-FIRE SENSOR” appears on the display.
10. Press **ENTER**.
11. To exit, press the **ESC** key and navigate to the main screen.

After completion of the above procedure, an alarm signal displays on the display interface in case of fire or smoke, and the unit stops operating.

Using the touchscreen

Path: Main > Configuration > Unit > Digital Inputs

1. Turn on the power to the unit and wait for the touchscreen to display.
2. Set the following configurations:

   NOTE: Settings may appear on a different screen.

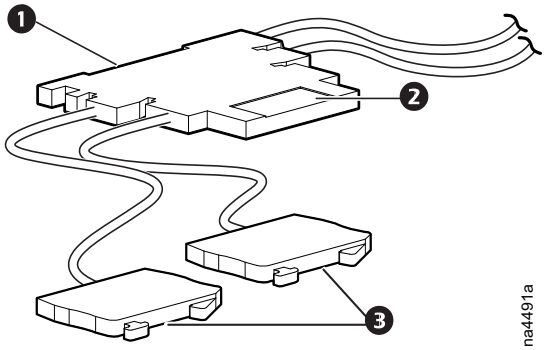
   Digital Input 4 Configuration: **Smoke-Fire Sensor**

   Digital Input 4 Function: **Alarm Signaling**

   Digital Input 4 Normal State: **Normally Open**
3. Press the **Home** button to return to the main screen.

24 V Relay for External Smoke/Fire Alarm

Inventory



Item	Description	Quantity
❶	Relay socket	1
❷	24V relay coil	1
❸	Terminal blocks	2

Installation

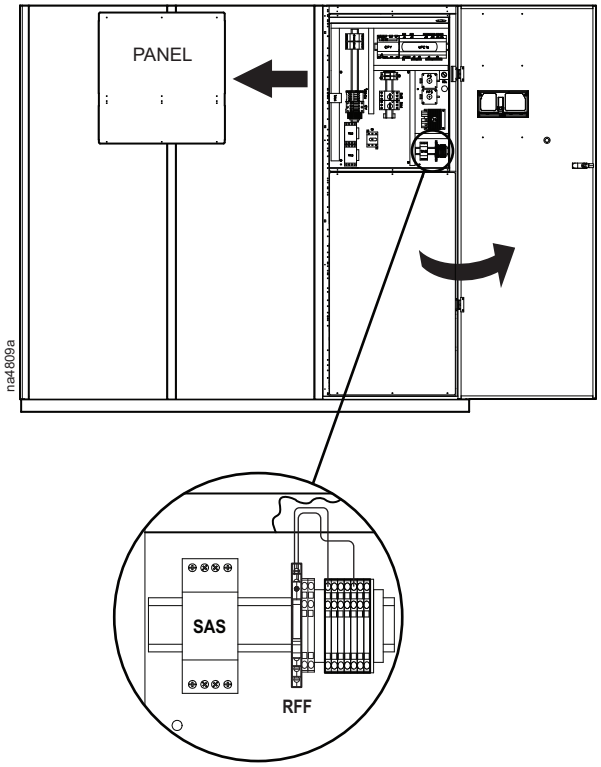
⚠⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

Turn off all power supplying this equipment before working on the equipment. All electrical work must be performed by licensed electricians. Practice Lockout/Tagout procedures. Do not wear jewelry when working with electrical equipment.

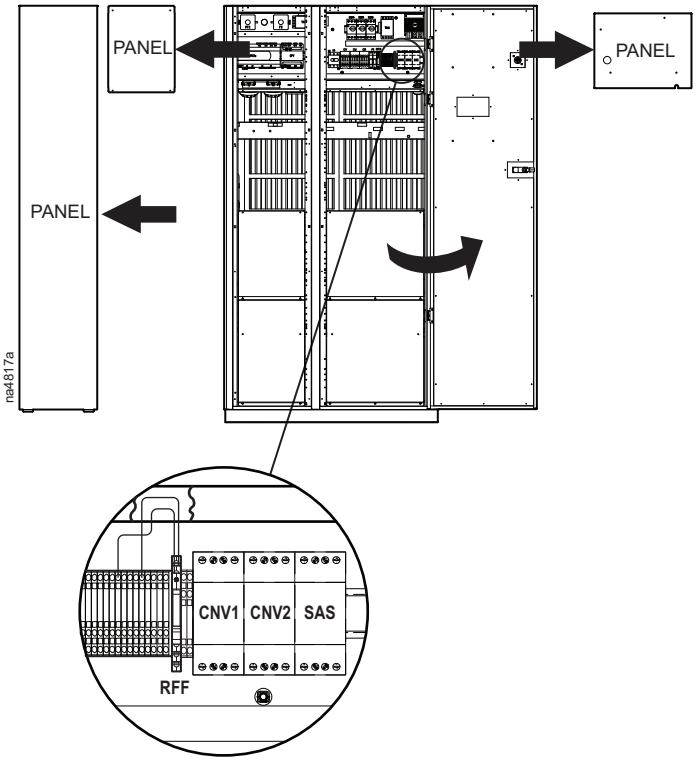
Failure to follow these instructions will result in death or serious injury.

1. Locate the mounting location based on the unit model. The following graphics provide mounting locations.



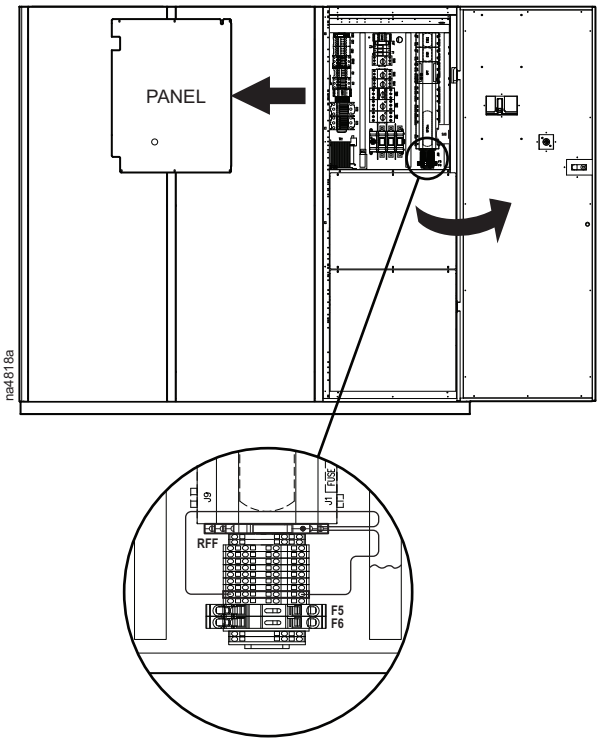
MODEL

TD/UCV 1000 - 4300



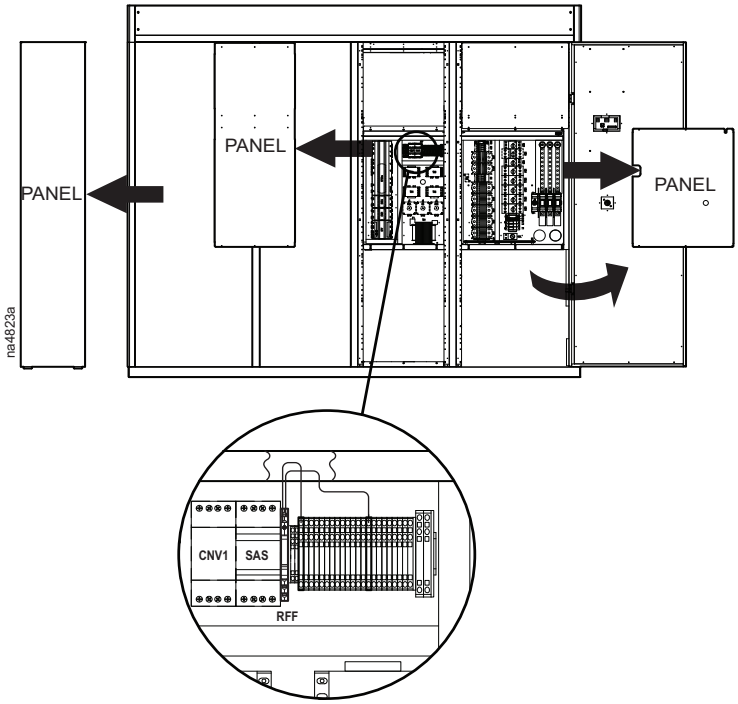
MODEL

TD/UCV 1000 - 0700



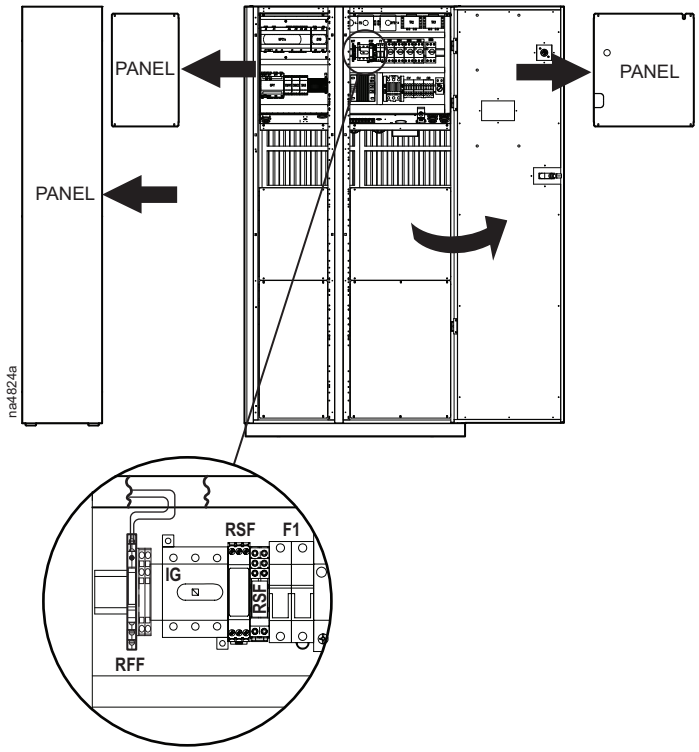
MODEL

TD/UAV 0921 - 1822
TD/UWV 0921 - 1822
TD/UEV 0921 - 1822
TD/UDV 0921 - 1822
TD/UTV 0921 - 1822



MODEL

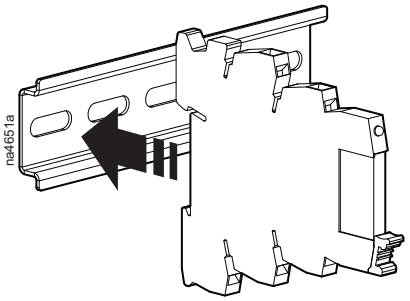
TD/UAV 2242 - 3342
TD/UWV 2242 - 2842
TD/UEV 2242 - 2842
TD/UDV 2242 - 2842
TD/UTV 2242 - 2842



MODEL

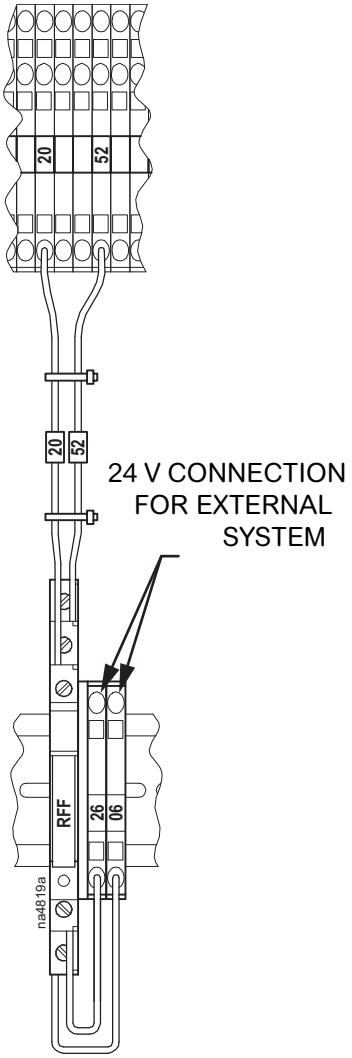
TD/UAV 0511 - 0611
TD/UWV 0511 - 0611
TD/UEV 0511 - 0611
TD/UDV 0511 - 0611
TD/UTV 0511 - 0611

2. Attach the relay socked and terminal blocks to the DIN rail.



3. Connect wire 20 and 52 on the labeled terminal blocks inside the electrical box. Wire routing may be needed on some units.
4. Connect the customer/external wiring to terminal blocks 026 and 006.

NOTE: This requires an external 24 V signal (DC or AC).



Configuration

Using the standard LED display

1. Turn on the power to the unit.
2. Navigate to the Digital Input 4 Selection Screen.
3. Change the setting to "Smoke-Fire Sensor".
4. Test the smoke and fire alarms to ensure proper function. Alarm will activate when the 24 V signal is received or lost, depending on customer setup.

Tips:

- The relay is physically configurable between NC (Normally Closed) or NO (Normally Open). The relay is Normally Open by default.
- The relay can be installed in series with the internal smoke/fire detection system.
- Input (ID4) is the default “Type A” alarm. It also requires a MANUAL reset by default. It is recommended to isolate ID4 as a “Type B” alarm for Smoke/Fire (Type B not available on models T*EV0511-0611).
- The relay coil must be powered by an outside source (customer supplied 24 V).

Using the touchscreen

Path: Main > Configuration > Unit > Digital Inputs

1. Turn on the power to the unit and wait for the touchscreen to display.
2. Set the following configurations:

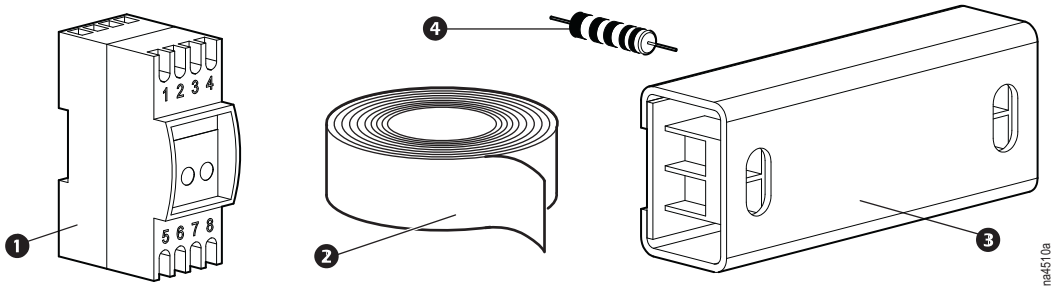
   Digital Input 4 Configuration: **Smoke-Fire Sensor**

   Digital Input 4 Function: **Alarm Signaling**

   Digital Input 4 Normal State: **Normally Open**
3. Press the **Home** button to return to the main screen.

Water Leak Detectors

Inventory



Item	Description	SKU	Quantity
❶	Flooding sensor detector (SAS module)	N/A	1
❷	Water leak detecting strip, 25 m (82 ft)	ACAC76118	1
❸	Spot water detector	ACAC76119	1
❹	10 kOhm resistor Note:Taped to the back of the spot water detector.	N/A	1

Installation

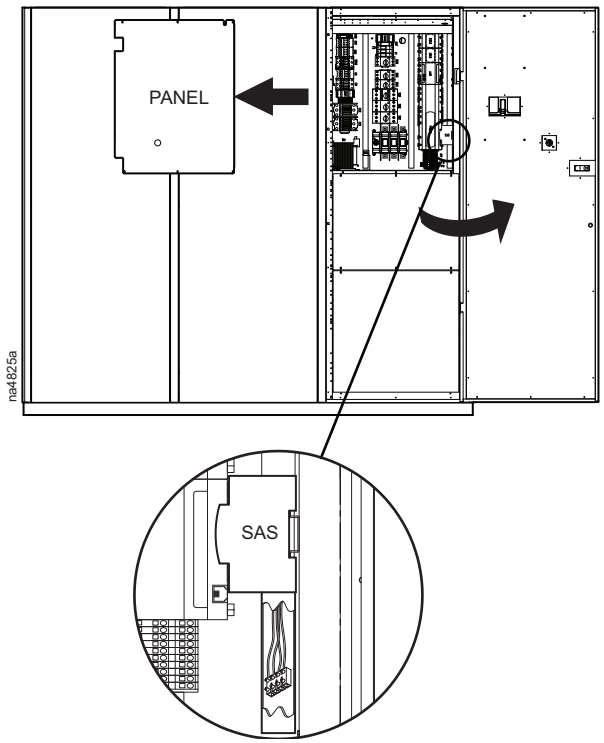
DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

Turn off all power supplying this equipment before working on the equipment. All electrical work must be performed by licensed electricians. Practice Lockout/Tagout procedures. Do not wear jewelry when working with electrical equipment.

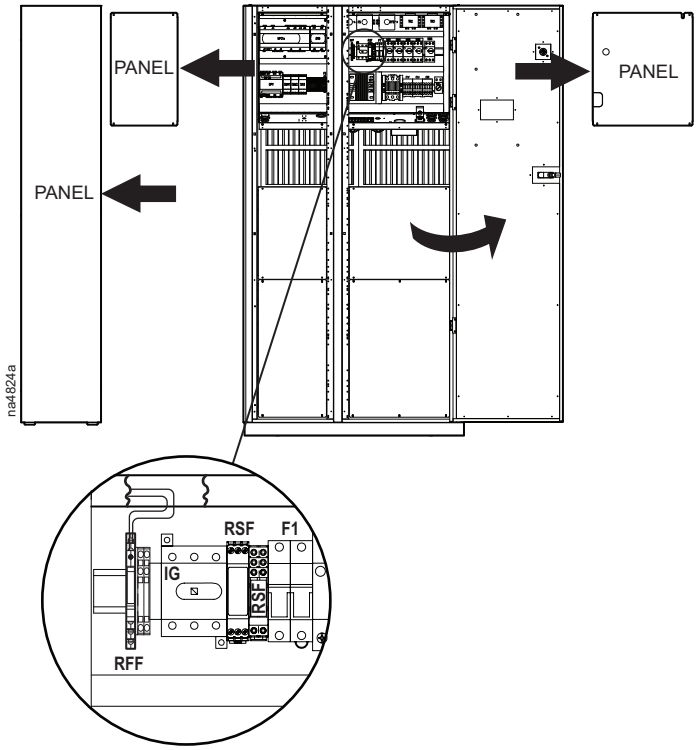
Failure to follow these instructions will result in death or serious injury.

1. Locate the correct unit type from the diagrams below to find the installation location of the SAS module in the electrical panel. The following diagrams provide models and SAS module location.



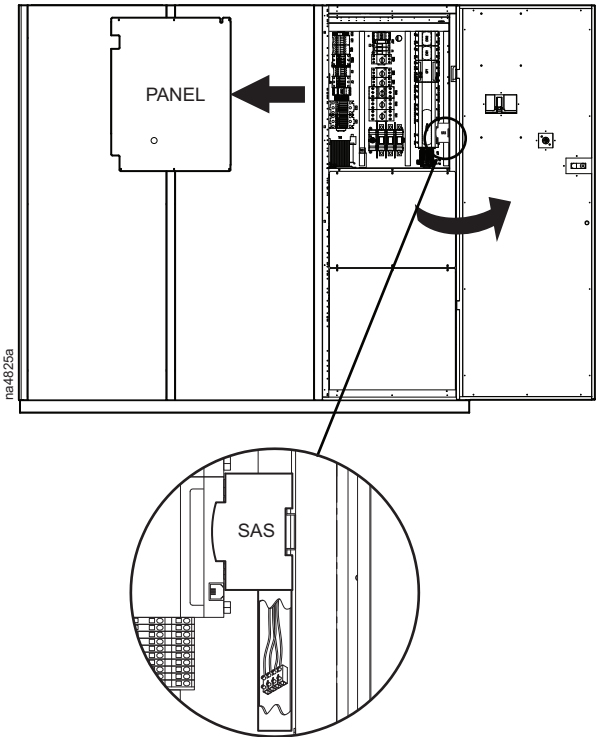
MODEL

TD/UCV1000
TD/UCV1200
TD/UCV1700
TD/UCV2500
TD/UCV3400
TD/UCV4000
TDCV 4300



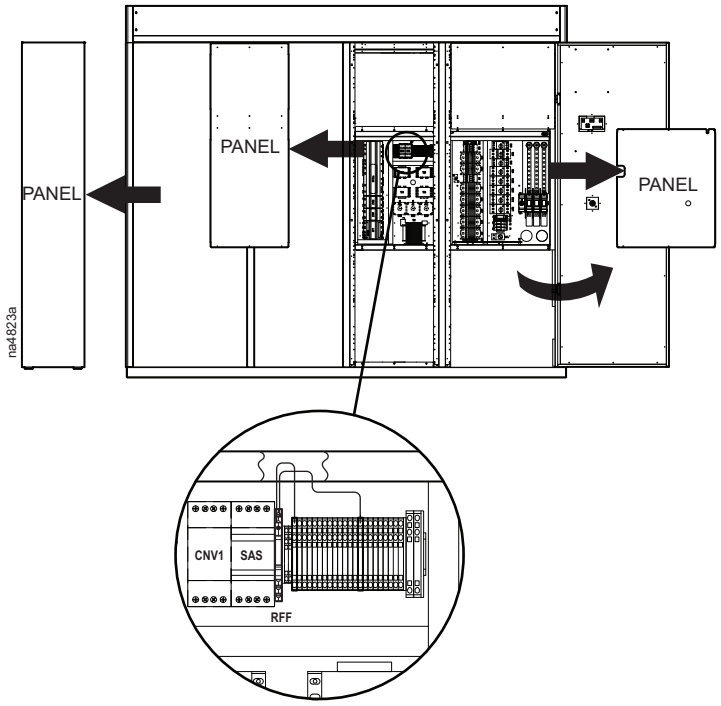
MODEL

TD/UCV0700



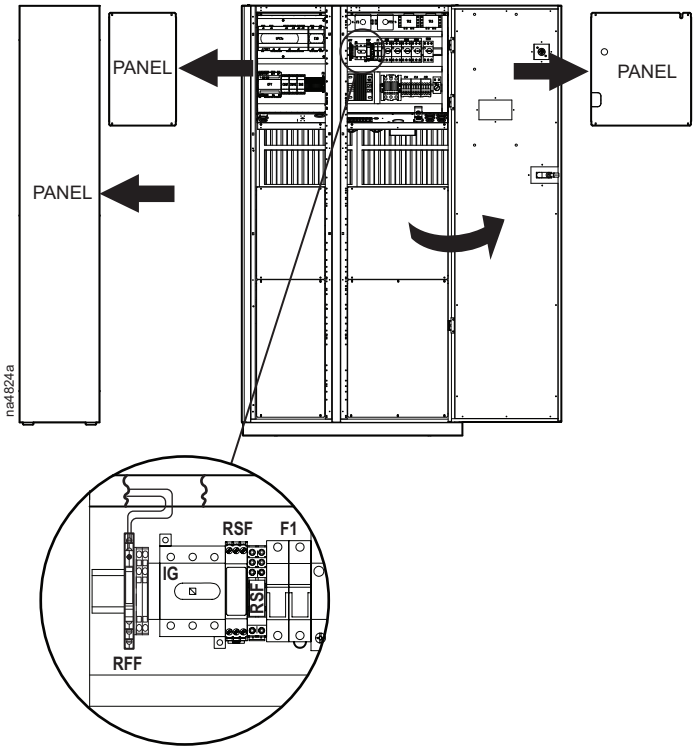
MODEL

TD/UAV 0921 - 1822
TD/UWV 0921 - 1822
TD/UEV 0921 - 1822
TD/UDV 0921 - 1822
TD/UTV 0921 - 1822



MODEL

TD/UAV 2242 - 3342
TD/UWV 2242 - 2842
TD/UEV 2242 - 2842
TD/UDV 2242 - 2842
TD/UTV 2242 - 2842

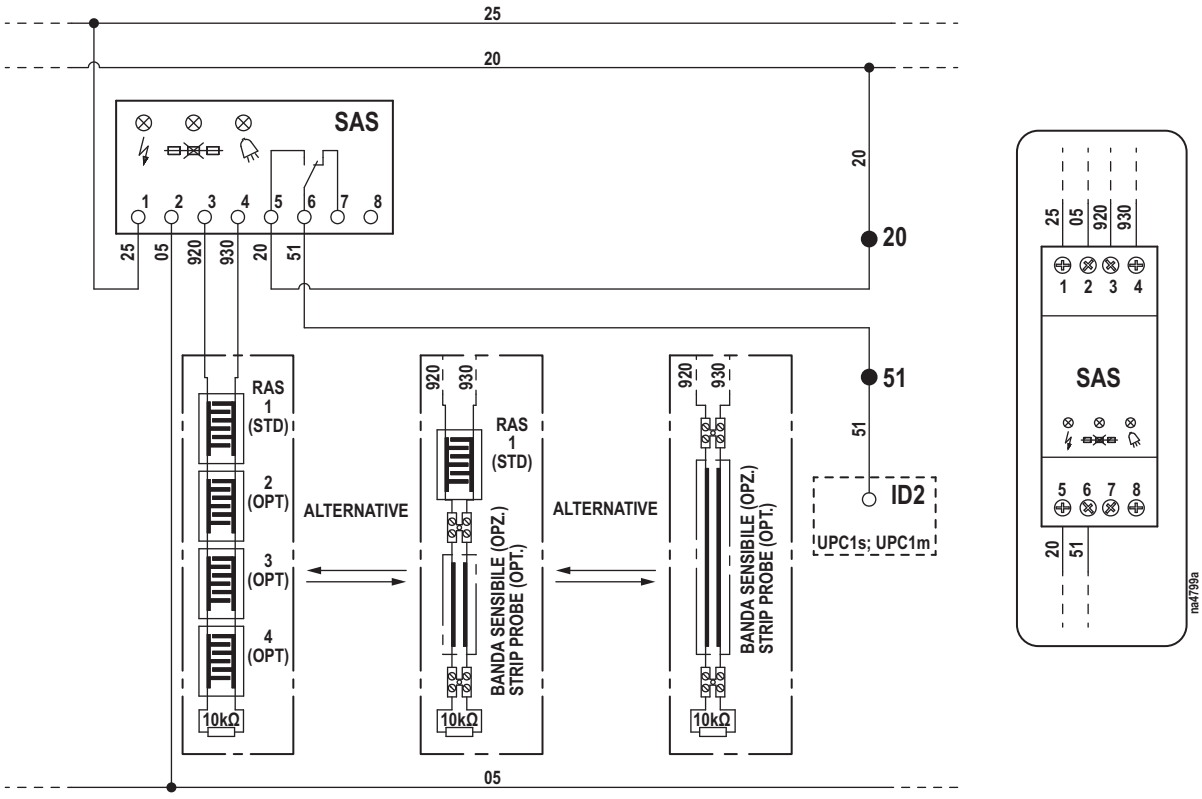


MODEL

TD/UAV 0511 - 0611
TD/UWV 0511 - 0611
TD/UEV 0511 - 0611
TD/UDV 0511 - 0611
TD/UTV 0511 - 0611

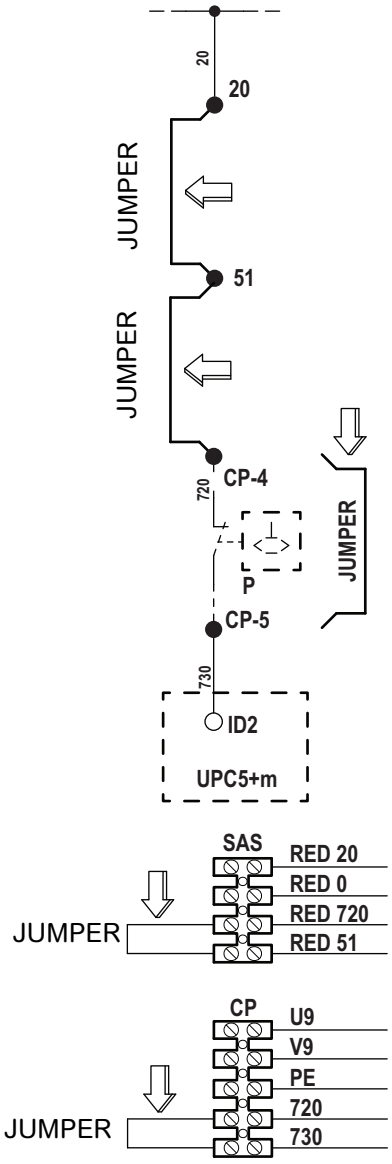
2. Install the SAS module in the proper location on the DIN rail.
3. The following provides wiring diagrams based on unit type:
   a. For T*CV units:

STANDARD WIRING DIAGRAM T*CV

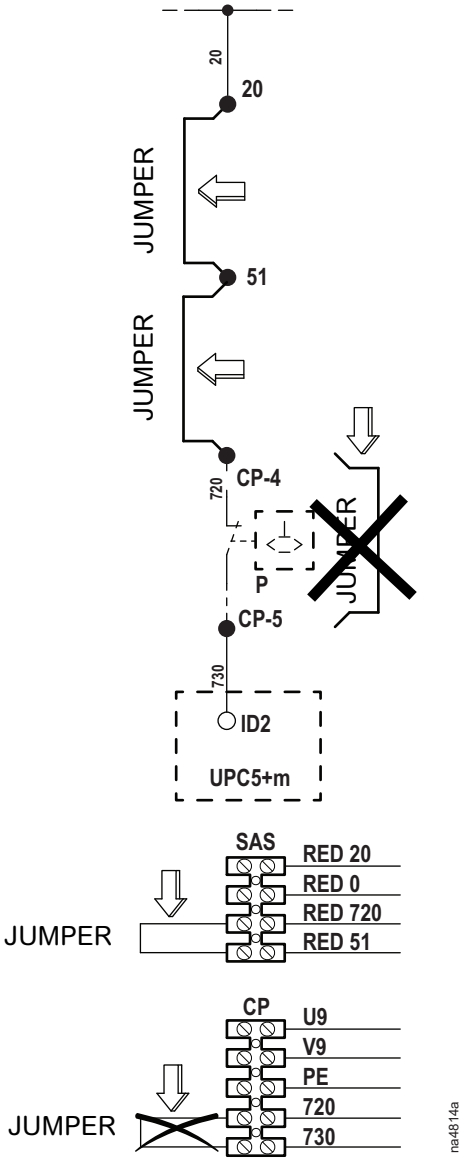


   b. For T*AV, T*EV, T*DV, T*WV, T*TV, and HDCV units:

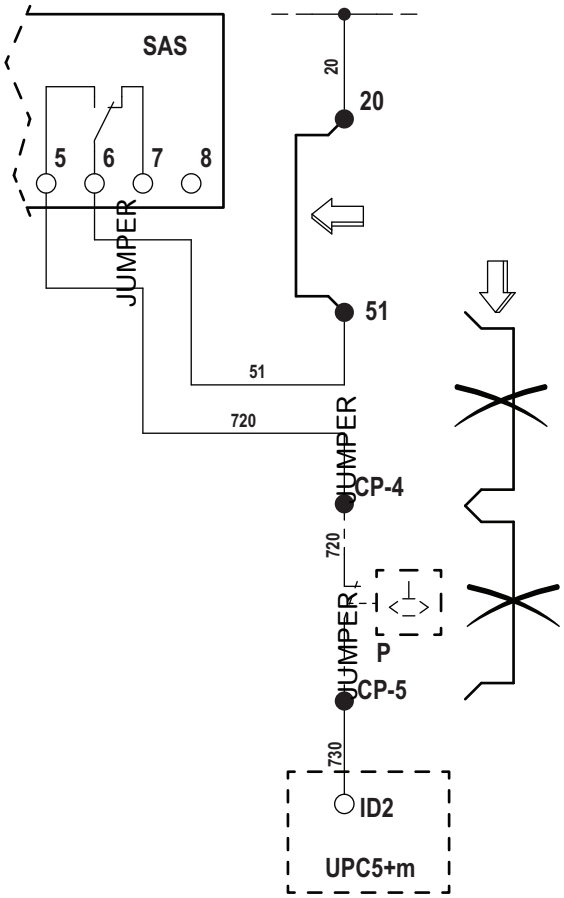
STANDARD FACTORY INSTALLATION

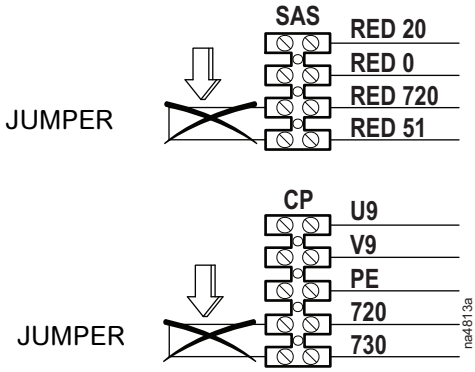


CONDENSATE DRAIN PUMP ALARM CONTACT

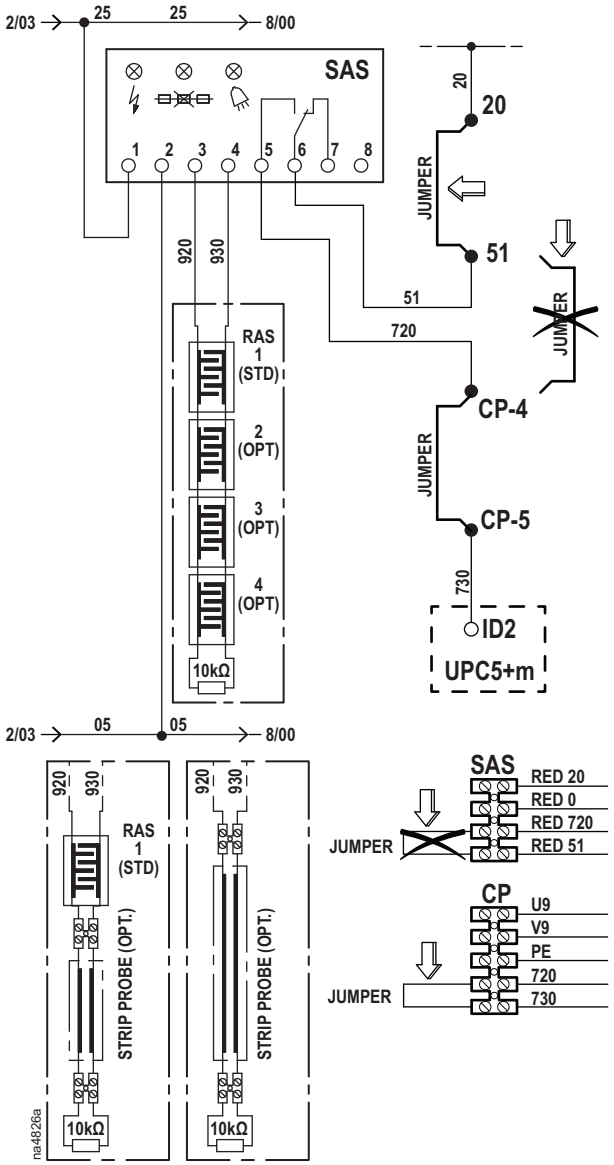


FLOODING DETECTOR + CONDENSATE DRAIN PUMP ALARM CONTACT

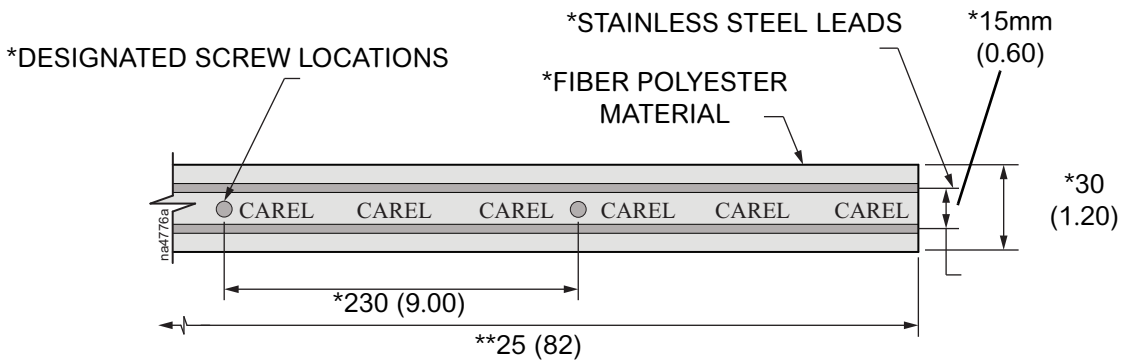




FLOODING DETECTOR



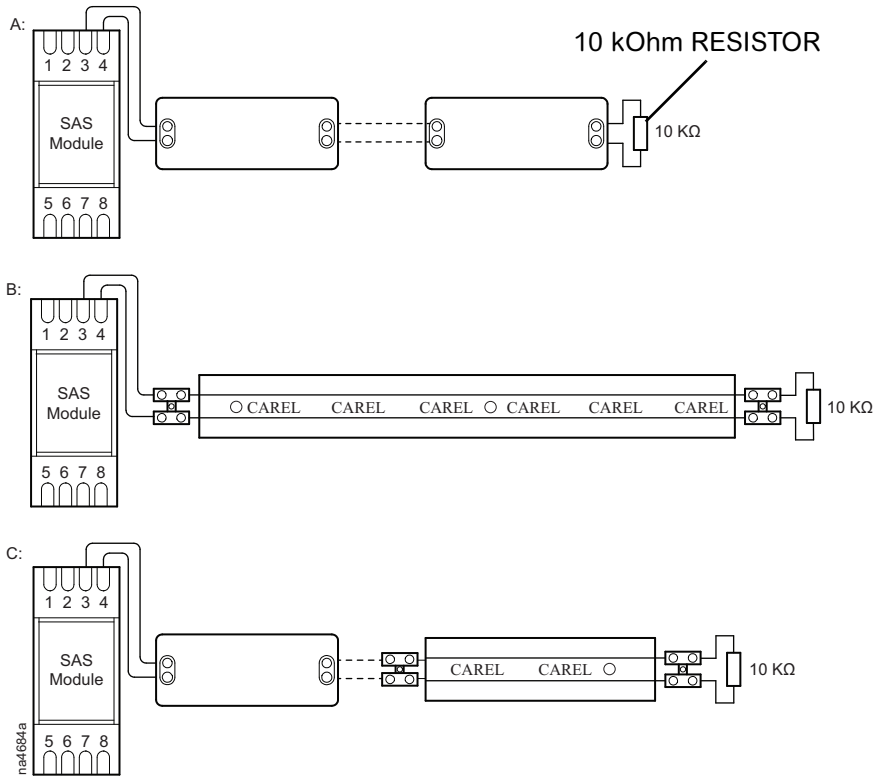
4. The sensor is normally closed, and the alarm activates when the circuit is completed by either the spot or tape detectors when water is present.
5. After the wiring to the unit is complete, locate a proper position/layout location for the tape or spot leak detector.



*Dimensions shown in mm (in.)
**Dimensions shown in m (ft.)

6. The tape sensor provides water leak detection along the entire length of the strip and can be placed on the floor or on other surfaces, e.g. wrapped around pipes and flanges. It can be fastened using screws, silicon, or clamps.
7. The spot sensor is made up of a corrosion-proof metal container, with access to the two terminals for connecting the line.
8. The following diagram displays typical connection layouts. Terminate the line with the provided 10 kOhm resistor (see the graphic below) at the end of the tape/spot sensor chain.

   NOTE: The resistor is located on the back of the detector.



NOTE: There is no limit to the number of spot sensors that can be installed. The maximum wiring distance is 487 m (1600 ft).

9. After layout is complete and the 10 kOhm resistor is attached, wire the sensor(s) back to terminals 3 and 4 of the SAS module inside the unit.

TIPS

- The 10kOhm resistor is taped on back of SAS module.
- The alarm is activated by the presence of water or the condensate pump alarm contact.
- The alarm will only cause the unit to switch off if it has been chosen as a second level alarm.
- The alarm can be configured to activate the standby unit in a group. This is set under “Rotational Standby Alarms”.

LED status lights

Condition	Description
Green	Power supply present
Yellow	Sensor(s) not connected to the SAS module, or line not terminated with the 10 kOhm resistor
Red	Water present (alarm)

Additional installation details

Power Details	Description
Power Supply	24 V +- 10% 50/60Hz

Power Details	Description
Maximum Power Input	1.5 VA
Maximum length of wiring from sensor to SAS module	500 m (1640 ft), with single-wire cable and double insulation
Length of tape sensor	25 m (82 ft)
Diameter of stainless steel wiring for tape sensor	0.6 mm (0.24 in.)

Configuration

Using the LED display

1. Turn on the power to the unit and wait for the main screen to appear on the display
2. Press **Prg**.
3. Select **SERVICE MENU**, then press **ENTER**.
4. Enter the password.

   NOTE: The password is found inside the envelope attached to the manual. If the password has been changed, enter the new password instead
5. Press **ENTER**.
6. Select **HARDWARE SETTINGS**, then press **ENTER**.
7. Navigate to DIGITAL INPUT 2 CONFIGURATION.
8. Check to ensure that the existing setting is not used. If this does not correspond to your settings, whatever function is currently attributed to that digital input of the control will be lost at the end of this procedure and replaced with the one relative to the operation of the flooding detector.
9. Press **ENTER** until the flashing cursor stops under NOT USED.
10. Navigate to **FLOODING SENSOR** appears on the display.
11. Press **ENTER**.
12. To exit, press the **ESC** key and navigate to the main screen.
13. Test the accessory to ensure proper function. The alarm will trip when a 24 V signal is received due to water presence.

Additional Settings

1. Under **Hardware Settings**, select **Flooding Alarm**.

   The Off setting on the alarm defaults to “N”. This indicates that the unit will not shutdown when the alarm activates.
2. Change this setting to "Y" to enable an active leak/flooding/condensate alarm to shutdown the unit.
3. By default, “Valve Closed” on AI. is set to "N". Selecting "Y" enables the water valve (if applicable) to close if the leak/flooding/condensate pump alarm is active.

Using the touchscreen

Path: Main > Configuration > Unit > Digital Inputs

1. Turn on the power to the unit and wait for the touchscreen to display.
2. Set the following configurations:

   Digital Input 4 Configuration: **Water Detection Sensors**

   Digital Input 4 Function: **Alarm Signaling**

   Digital Input 4 Normal State: **Normally Open**
3. Press the **Home** button to return to the main screen.

Automatic Floor Pressurization System

Overview

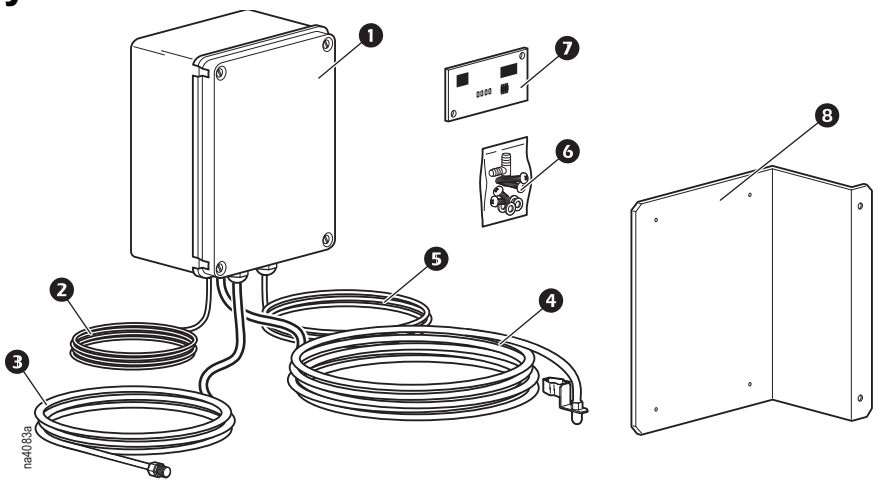
The Automatic Floor Pressurization System (AFPS) (ACAC76128) maintains air pressure underneath a raised floor to a desired setpoint. By modulating fan speed, an AFPS kit for Uniflair Chilled Water (CW) units compensates for air pressure changes in an active and growing data center.

NOTE: The AFPS is not recommended for Direct Expansion units.

The AFPS kit is supported by the following Uniflair CW models:

- TDCV0700
- TDCV1000
- TDCV1200
- TDCV1700
- TDCV2500
- TDCV3400
- TDCV4000
- TDCV4300
- HDCV4500
- HDCV5000

Inventory



Installation

Item	Description	Quantity
❶	AFPS controller	1
❷	Power supply harness	1
❸	Above-floor pressure sensor tubing	1
❹	Below-floor pressure sensor tubing	1
❺	Communication wiring	1
❻	Installation hardware (screws and washers)	1
❼	tLAN card	1
❽	Mounting bracket	1

⚠ ⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

Turn off all power supplying this equipment before working on the equipment. All electrical work must be performed by licensed electricians. Practice Lockout/Tagout procedures. Do not wear jewelry when working with electrical equipment.

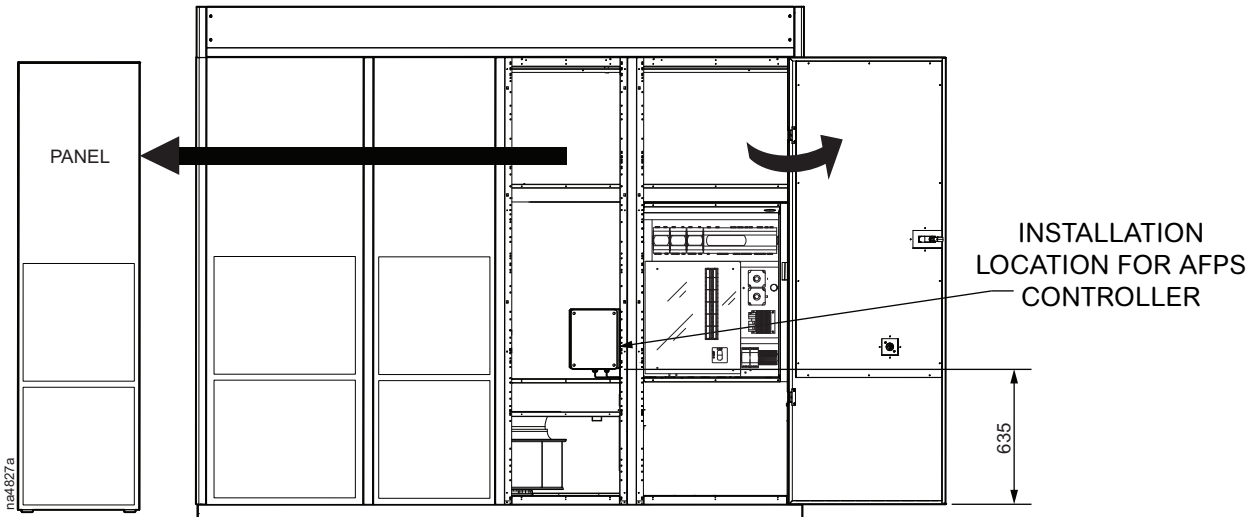
Failure to follow these instructions will result in death or serious injury.

Cooling Unit Shutdown

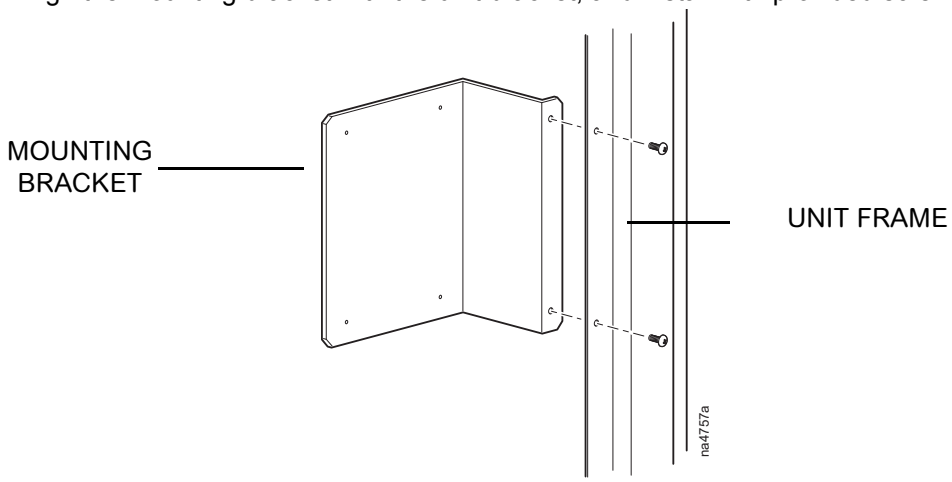
1. From the display interface, put the unit in stand-by and wait for the fans to stop.
2. Turn the disconnect switch to the **OFF** position.

Attaching the Controller Box

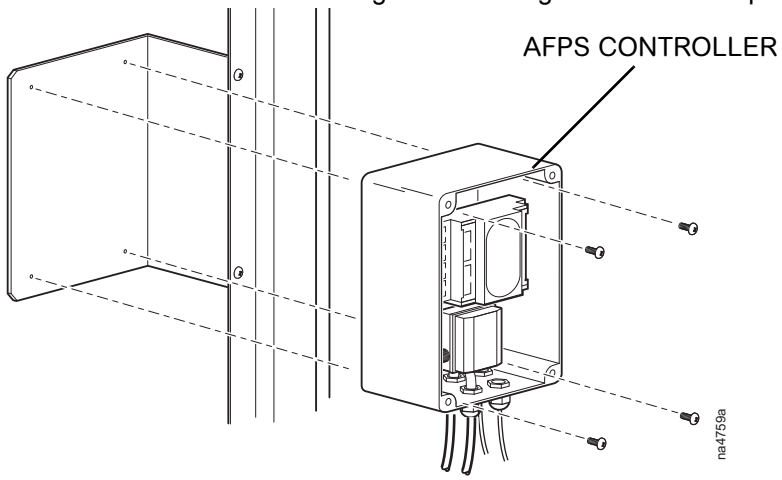
1. Determine the mounting location on the unit bracket and attach the bracket to the unit frame with the two provided screws.



2. Align the mounting bracket with the unit bracket, and install with provided screws.



3. Using a standard screwdriver, remove the front cover and rear tabs from the AFPS controller.
4. Attach the AFPS controller to the mounting bracket using the four screws provided.



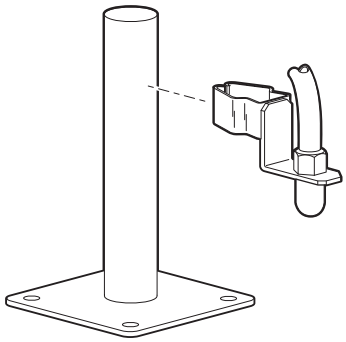
5. Replace the AFPS controller cover.

Installing the sensors

1. Locate the mounting point for the sensor head on the wall, and route the tubing through the bottom of the unit and underneath the floor tiles to this location.

NOTE: Do not place the positive pressure sensor head under the raised floor where the airflow velocity is high. For example, directly beneath the unit. The recommended position for the pressure sensor head is 3–4 m (10–13 ft.) away from the unit.

2. Fasten the mounting clamp to a raised floor post.
3. Ensure that excess tubing is carefully secured. Avoid sharp bends or kinks in the tubing.



The above-floor pressure sensor can be installed in the port located at the bottom-right corner of the Uniflair unit.

1. Using a standard screwdriver, pry off the cover on the sensor port.
2. Route the tubing through the cooling unit, neatly coiling any excess tubing.
3. From inside the unit, attach the sensor head to the port, then fasten the fitting into the port from outside the unit.

If the unit is not in the air-conditioned room, the tubing can be installed using the wall mounting bracket provided with the kit.

⚠ WARNING

HAZARD TO EQUIPMENT OR PERSONNEL

Verify that the area behind the wall is free of electrical wires or piping before drilling holes into the wall.

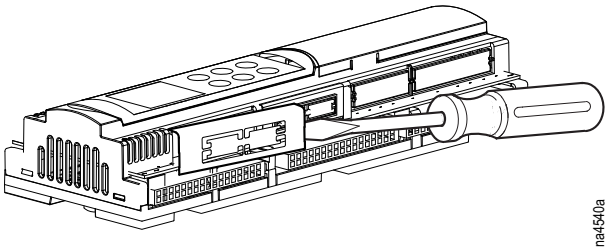
Failure to follow these instructions can result in death, serious injury, or equipment damage.

1. After determining an appropriate location for the sensor, drill a hole through the wall and mount the sensor bracket.
2. Tubing can be installed behind the wall and through the hole, then attached to the sensor.

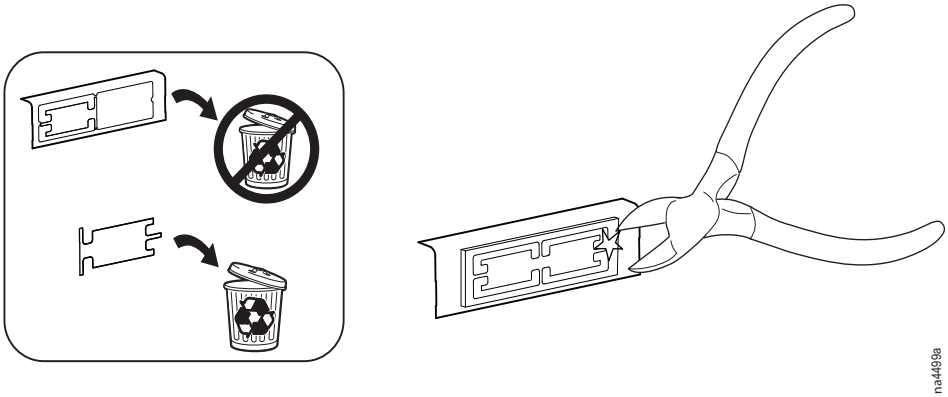
NOTE: Ensure that the wall-mounted sensor is installed away from direct airflow to ensure proper pressurization detection.

tLAN connection

1. Using a screwdriver, remove the analog selection cover on the controller inside the unit.



2. Using cutting nippers, remove the precut plastic hatch to access the tLAN card slot.



3. Aligning the connector pins, insert the tLAN card into the slot and push into place, making sure the card is pushed against the two plastic supports on the case.

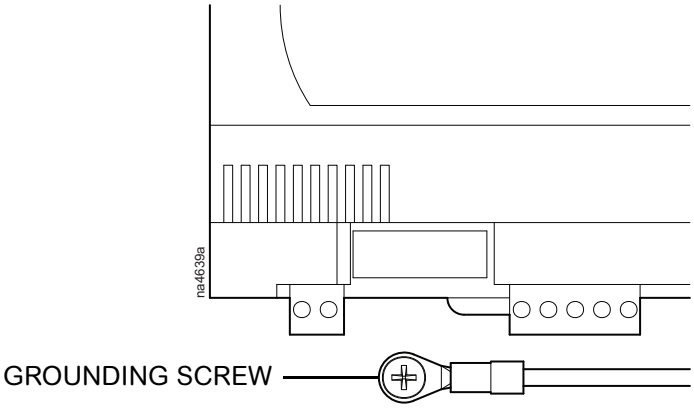
NOTICE
UNPROTECTED OUTPUTS Be sure all pins on the circuit board are properly seated and not bent or touching other pins. **Failure to follow these instructions can result in equipment damage.**

4. Put the cover back on the controller and snap into place.

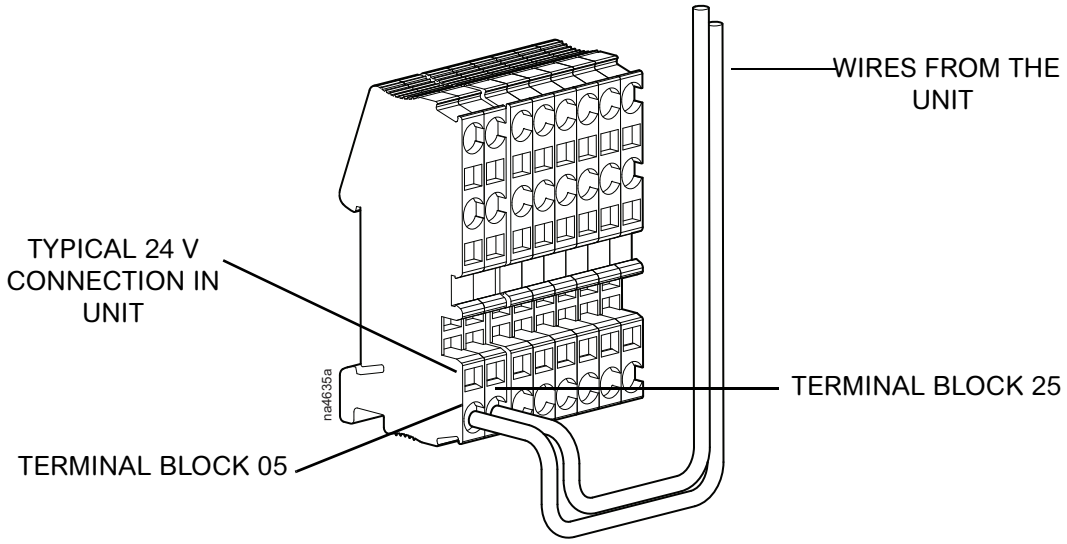
Supply power connections

1. Route the tLAN cables and supply power harness to the electrical panel.
2. Connect J3 from the AFPS to the green connector on the tLAN card.

3. Attach the grounding wire from the harness to the grounding screw on the unit.



4. Attach the electrical wires to the 24 V AC power terminals provided in the terminal block of the Uniflair CW unit.



Configuration

1. From the display interface, put the unit in stand-by mode and wait for the fans to stop.
2. From the main screen press the **Prg** key, select SERVICE MENU and press **Enter** to confirm.
3. Type in the Service Password (see the envelope attached to the manual) and press Enter to confirm.
4. Select **Hardware Settings** and press **Enter** to confirm.
5. Navigate to the parameter settings screen and begin configuration:

Evaporating fan

Fan Supply (Fan power supply (Monophase/Triphase): 3ph

Modulation with air pressure enabled (Fan modulation activated by the air pressure transducer): Modulation with Air
Air pressure transducer:

Y = transducer and AFPS kit is installed in the unit
N = units in LAN network, transducer is not installed but modulation is activated.

EVAPORATING FAN

Fan Supply:	3ph	
Modulation with air pressure enabled:	Y	Y
Air press.transducer	Y/N	

Transducer

Range Begin: The starting value of the transducer.
Range End: Ending value of the transducer.
Read Value: The reading taken by the sensor.
Delta: Maximum variation without activating the filter.
Time: Duration of the filter.
Value: **Reading taken by the sensor**.

AIR PRESS. TRANSDUCER		
Range Begin.		Pa 000.0
Range End.		Pa 100.0
Read Value		Pa 020.0
INPUT FILTER		
Delta	Pa	4.0
Time	s	01
Value	Pa	020.0

Evaporating fan speed

Minimum speed: Minimum evaporating fan speed during modulation.
Maximum speed: Maximum evaporating fan speed during modulation.

EVAPORATING FAN REGULAT.

Minimum Speed : % 40
Maximum Speed: % 100

Evaporating fan regulation

Setpoint: The reference pressure value that needs to be maintained by the modulation of the fans.
Dead Band: Dead band regulation
Regul. Band: Proportional regulation band
Integral Time: integral time
Derivat. Time: derivative time
Air pressure: the reading taken by the sensor
Evaporating Fan: evaporating fan regulation percentage

EVAPORATING FAN REGUL.		
Setpoint	Pa	020.0
Dead Band	Pa	000.0
Regul. Band	Pa	160.0
Integral Time		s 040
Derivat. Time		s 000
Air Pressure	Pa	020.0
Evaporating Fan		% 000

Alarm parameters

Alarm Level: Low air pressure alarm activation level.
Alarm Delay: Low air pressure alarm activation delay time.

EVAPORATING FAN REGUL.

Alarm Level	Pa	015.0
Alarm Delay	s	060

6. To exit, press the **ESC** key and navigate to the main screen.

Using the touchscreen

Path: Main > Configuration > Unit > Airflow > Group

1. Turn on the power to the unit and wait for the touchscreen to display.

   NOTE: Settings may appear on a different screen.
2. Press **Fan: Controlled by AFPS**
3. Press **Yes** to enter your credentials.
4. Enter your credentials and begin configuration.

   Fan: Controlled by AFPS: Present

   Fan AFPS on Unit: Present

   AFPS Setpoint: 20

   AFPS Low Air Pressure Threshold: 15

   AFPS Max. Fan Speed: 100%

   AFPS Min. Fan Speed CW: 40%

   Fan AFPS Control Type: Advanced

   AFPS Deadband:100%

   AFPS Regulation Band: 160

   Air Pressure Transducer Input Filter Time: 1

   AFPS Sensor Min: 0

   AFPS Sensor Max: 100

   AFPS Sensor Input Filter Value: 0

   AFPS Sensor Input Filter Delta Threshold: 4

   AFPS Integral Time: 40

   AFPS Derivative Time: 0

   Fan Speed Derivative Time (using AFPS): 0

   Fan Speed Integral Time using AFPS: 40
5. Press the **Home** button to return to the main screen.

Configuring the LAN settings using the LED display

1. From the main screen press the **Prg** key, select **Settings Menu** and press **Enter** to confirm.

   NOTE: The password is found inside the envelope attached to the manual. If the password has been changed, enter the new password instead
2. Enter the password.
3. Select **LAN Settings** and press **Enter** to confirm.
4. Navigate to the Parameters Setting screen. The following provides settings for air pressure control.

Local Values: Fan speed modulation is controlled by the pressure reading taken by the sensor on each unit.

LAN SETTINGS
Temp./Hum. Control
Mode: Local Values
Air Pressure Control
Mode: Local Values

M**ean Values**: Fan speed modulation is controlled by the average pressure reading taken by the sensors on the units connected on a local network.

LAN SETTINGS
Temp./Hum. Control
Mode: Local Values
Air Pressure Control
Mode: Mean Values

5. After setting the parameters, navigate to the main screen.
6. To save the data that has been entered, restart the unit.
7. Repeat steps 1–7 for each unit.
8. To exit, press the **ESC** key and navigate to the main screen.

NOTE: Fan speed modulation settings can be determined through sensor reading of the unit, or by calculating the average reading of all units on the LAN.

Configuring the LAN settings using the touchscreen

Path: Main > Configuration > Unit > Airflow > Group

1. Turn on the power to the unit and wait for the touchscreen to display.

   NOTE: Settings may appear on a different screen.
2. Press **Number of LAN Units**.
3. Press **Yes** to enter your credentials.
4. Enter your credentials and begin configuration.

   Number of LAN Units: Enter the number of units on the LAN

   Number of Standby Units: Enter the number of units in standby

   Sensor Values Used: Enter the number of sensor values used

   Delta Temperature for Automatic Changeover: Enter the temperature

   Delta Temperature to Switch to Local Control: Enter the temperature

   Unit Rotation Time: Enter the required number of hours

   Automatically Switchover to Standby Unit: Set as required

   Rotate to Standby Unit Only on Alarm: Set as required

   Exclude from Rotation: Set as required

   Switchover Mode: Set as required

   Switchover On Power Loss: Enable

   Number of Days Between Rotation: Enter the number of required days between each rotation.

   Hour of Rotation: Enter the hour for the rotation to take place.

   Minute of Rotation: Enter the minute for the rotation to take place

Rotation Weekday: Enter the required day

5. Press the **Home** button to return to the main screen.

Communications Cards

The Carel™ pCOWeb controller provides slots for the following communications cards:

Slot	Type	SKU	Part #	Protocol
BMS2	SE Touchscreen	N/A	N/A	Via TCP/IP (Modbus IP, StruxureWare, SNMP, Web)
BMS1	Available	N/A	N/A	N/A
	TCP/IP	ACAC76122	N/A	Modbus IP, StruxureWare, SNMP, pCOWeb, BacNet IP
	LON	ACAC76124	0M-21AS104CDZ	LONworks
	RS485	ACAC76123	0M-21AS102CDZ	Modbus RTU
	RS485	N/A	0M-21AS108CDZ	Bacnet MS/TP
	RS232	ACAC76125	0M-21AS106CDZ	Modem

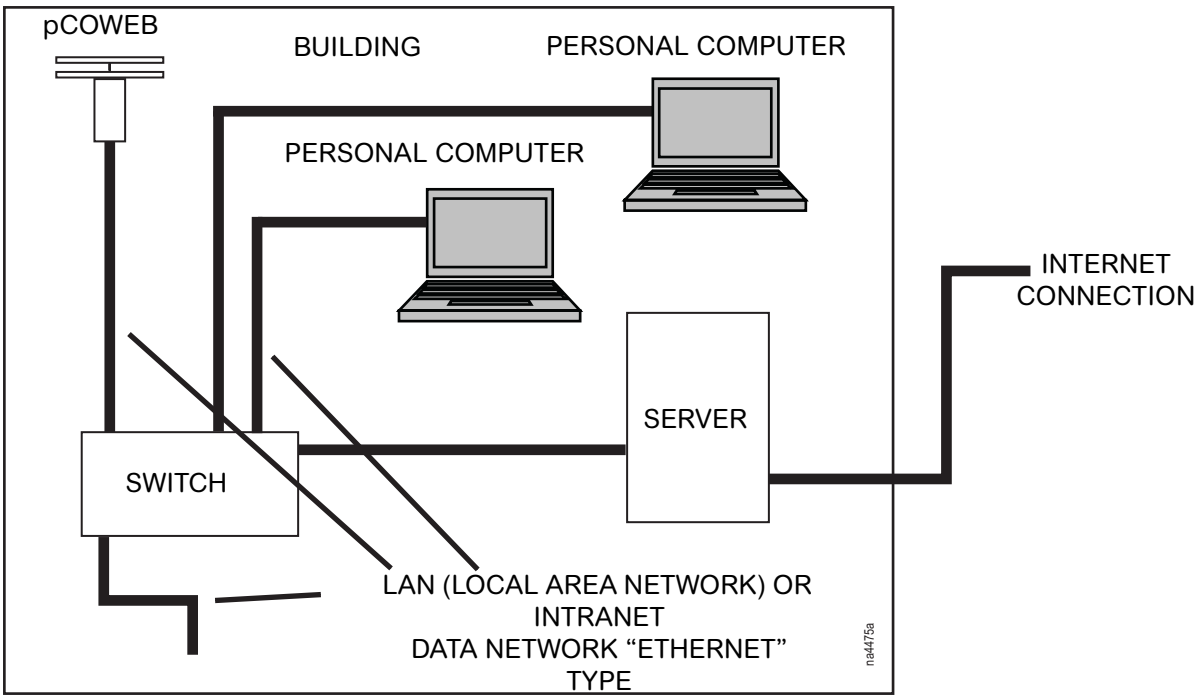
NOTE: Only one communications card can be installed on each pCO controller. This does not apply to touchscreen communication card configurations.

TCP/IP

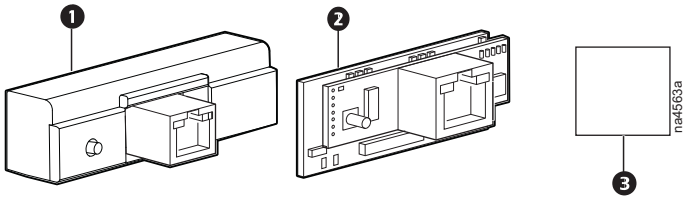
pCOWeb Network Card (ACAC76122)

The pCOWeb controller is connected to an internal network. If suitably configured, the PCs in the internal network communicate with pCOWeb, using network language protocols included with pCOWeb.

In a network, the exchange of data between Internet-Intranet is only enabled for some devices and types of communication.These decisions are defined by the network administrator.



Inventory



Item	Description	Quantity
1	Network controller card	1
2	Cover	1
3	Label that includes the required Media Access Control (MAC) address. **Remove one of these labels before installing to access the required MAC address.**	1

Installing the pCOWeb card

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

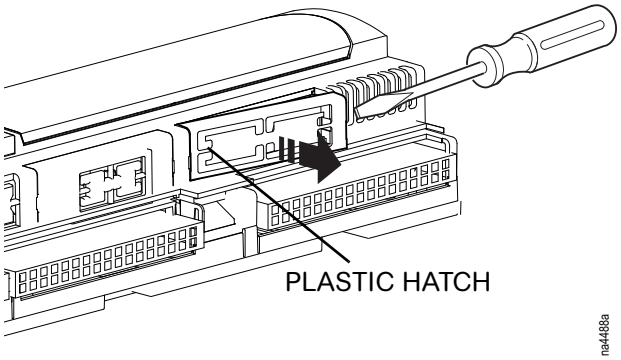
Turn off all power supplying this equipment before working on the equipment. All electrical work must be performed by licensed electricians. Practice Lockout/Tagout procedures. Do not wear jewelry when working with electrical equipment.

Failure to follow these instructions will result in death or serious injury.

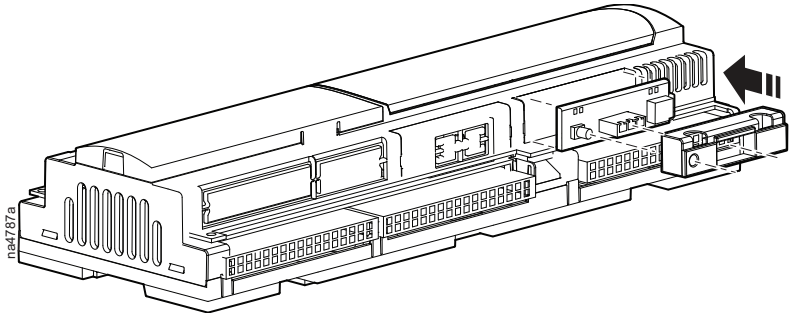
Each pCOWeb is uniquely distinguished by its own Media Access Control (MAC) address. The network administrator may need to check the MAC address of each pCOWeb installed. The MAC address is shown on the label applied to the connector and on the two labels included in the packaging. Once installed, the pCOWeb label may no longer be accessible. During installation, use scissors to separate the two labels supplied and apply one in an easily accessible position near the pCO controller on the electrical panel.

If more than one pCOWeb device is installed, a map of the installation should be created, applying the second label provided in the packaging onto the map for each pCOWeb corresponding to its physical position. This provides the network administrator with the required documents on where the pCOWeb devices and corresponding MAC addresses are located.

1. Disconnect the power supply to the pCOWeb controller.
2. Using a screwdriver, remove and recycle the plastic hatch from the electronic controller



3. Insert the pCOWeb card into the pCO controller and ensure it is fully seated.



4. Secure the pCOWeb card to the pCO controller with the supplied cover.
5. Insert the Ethernet cable.

Configuration

Using the LED display

NOTE: If installing multiple units on the network, each unit needs a unique address to avoid conflicts.

1. Press the **Prg** on the display interface.
2. Select **SETTINGS**.
3. Enter the password.
4. Select **SERIAL/MODEM SETTINGS**.
5. Enter the following:

   Serial Address: 001

   Serial Speed: 19200

   Protocol: Standard
6. To exit, press the **ESC** key and navigate to the main screen.

Using the touchscreen

Path: Main > Configuration > Unit > Communication

1. Turn on the power to the unit and wait for the touchscreen to display.

   NOTE: Settings may appear on a different screen.
2. Enter your credentials and begin configuration.

   BMS1 Serial Address: 001

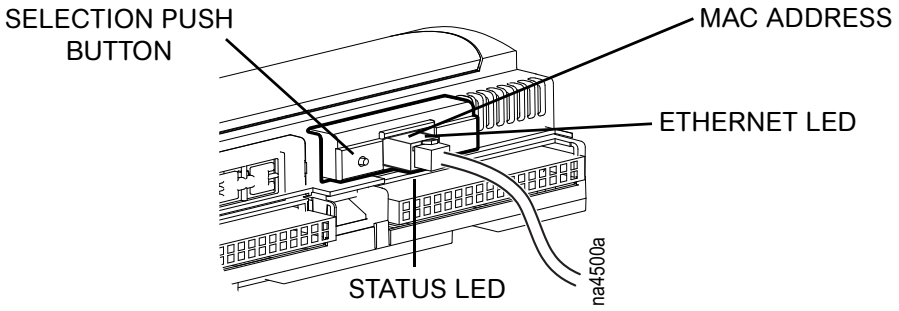
   BMS1 Serial Speed: 19200

   BMS1 Serial Protocol: Standard

   Remote ON/OFF Only Through Serial Communication: Enable
3. Press the **Home** button to return to the main screen.

User interface buttons and LEDs

The pCOWeb features a push button and two indicator lights (Status LED and Ethernet LED).



Item	Description
Selection Push Button	Used to select factory parameters or user parameters for network communication when starting the pCOWEB. **NOTE**: In normal operation, pCOWeb reboots without disconnecting the power supply.
MAC Address	MAC addresses required for setup.
Ethernet LED	Ethernet LED light.
Status LED	Status LED light.

LED indicator lights

Status LED This light displays the communication status of the pCOWeb card. During normal operation, the LED flashes green, approximately three times a second. In special circumstances, it displays the operation of service activities. This includes the restart of the internal program on the pCOWeb, and remote updating of the program.

Condition	Description	Notes
Green flashing (3 times/sec)	Regular pCO-pCOWeb communication	When running demanding tasks (sending a large number of notifications), this may be steady green for a few seconds.
Red flashing slowly (once every two seconds)	pCO-pCOWeb communication not established	
Single red flash and then flashing green	Single pCO-pCOWeb communication error, one failed response from the pCO, or it is attempting to write a variable with an index higher than 207.	After five failed responses, the Status LED starts flashing red until communication resumes.
Steady red	Rescue mode	
Off, then green-red repeated in rapid succession, then green steady for 1-2 minutes	pCOWeb reboot phase	
Green steady for 1-2 minutes	pCOWeb reboot phase	Wait for the conclusion of the reboot.
Red-Off slow (1 second - 1 second) repeated 3 times	The recognition of a button pressed during reboot for selecting the factory parameters.	Release the button to confirm.
Red-Off fast (3 times a second) repeated 3 times	During reboot, this confirms the selection of the factory parameters by pressing the button.	
Green-red repeated alternating (once a second)	During a firmware update, this shows the writing of block B to non-volatile memory.	Do not interrupt the power supply.

Condition	Description	Notes
Red steady followed by repeated green-red	During a firmware update, this shows the writing of block B to non-volatile memory.	Do not interrupt the power supply.

Ethernet LED Displays the status of the physical network connection (Ethernet connection signals), regardless of whether the network parameters are correct. This LED flashes green when transmitting data.

Condition	Description
Green steady	Correct Ethernet data connection signals
Green flashing	Correct Ethernet data exchange
Red	No Ethernet signal detected

Connecting to a PC

To connect the pCOWeb cable to a PC, connect the cable to the appropriate port.

Required equipment

- Computer with a Web browser, for example Internet Explorer™, fitted with an Ethernet network interface.
- pCOWeb card installed on the pCO controller
- Network cable

Other requirements

- Turn off the power to the pCO controller.

PC Configuration

NOTE: It is necessary to have administrator status for your PC to deactivate the Windows™ firewall.

The PC communicates with pCOWeb if settings on both devices are configured correctly.

The pCOWeb default settings can only be changed once the connection has been established with the PC. When first accessing the device, the PC needs to be configured for adaption to the pCOWeb default settings.

Disable the firewall

The firewall must be disabled to access pCOWeb.

1. On the Windows-based PC, select **Start** at the bottom-left corner of the screen.
2. Select **Control Panel**. The Control Panel window displays.
3. Select **Windows Firewall**.The Windows Firewall window displays.
4. Select **Off**.
5. Select **OK** to apply the changes and close the window.

Setting the IP address and subnet mask

The PC does not use DHCP and uses the IP address of:

172.16.0.100

The Subnet mask field must also be set (the Gateway is not required).

1. On the Windows-based PC, select **Start** at the bottom-left corner of the screen.
2. Select **Control Panel**. The Control Panel window displays.
3. Select **Network Connections**. The Network Connections window displays.
4. Select **Local Area Connection**. The Local Area Connection Status window displays.
5. Select **Properties**. The Local Area Connection Properties window displays.

6. If not already selected, select the **Internet Protocol (TCP/IP)** check box.
7. Select **Properties**. The Internet Protocol (TCP/IP) Properties window displays.
8. Select **Use the following IP address**.
9. Enter the IP address (including the dots): 172.16.0.100
10. Enter the Subnet mask (including the dots): 255.255.0.0
11. Select **OK** to apply the changes and close the window.
12. Select **OK** to close the remaining open windows.

C—Proxy

The following procedure provides details on enabling and disabling the network device called the “proxy” for communication.

1. On the Windows-based PC, select **Start** at the bottom-left corner of the screen.
2. Select **Control Panel**. The Control Panel window displays.
3. Select **Internet Options**. The Internet Properties window displays.
4. Select the **Connections** tab.
5. Select **LAN Settings**. The Local Area Network (LAN) Settings window displays.
6. If using a proxy server, click the **Use a proxy server for your LAN** check box.
7. Enter the Proxy Server Address and Port to be used.

To disable the proxy (if required):

1. Clear the **Use a proxy server for your LAN** check box.
2. Select **OK** to apply the changes and close the window.
3. Select **OK** to close the remaining open windows.

Activating factory network settings

1. Disconnect power to the pCOWeb controller.
2. Press and hold the button on the pCOWeb card and reconnect the power to the controller.
3. Continue to hold for 20 seconds until the Status LED flashes red.
4. Release the button before the Status LED flashes red three times. After a total of three red flashes, the LED will turn solid green.
5. After approximately one minute, the Status LED blinks green. At this point, the pCOWeb card has rebooted to the factory settings.

Opening pCOWeb

1. On the PC, open Internet Explorer®.
2. Enter the address field (including the dots): **172.16.0.1**
3. Press **Enter.** The pCOWeb main page displays.

NOTE: If the address is not found, check the Status LED. If solid green, allow more time for the pCOWeb card to boot. If blinking green, repeat the “Activating factory network settings” on page 76 instructions.

Entering the IP Address/NetMask

1. Select the **Go to Administrator area** link.
2. Enter the Default Username: admin
3. Enter the Default Password: fadmin (the Administrator Area displays)

4. Select **Configuration** from the menu at the left of the screen.
5. Select the **Network** tab.
6. Enter the IP Address (example: 10.0.8.56). If using DHCP, leave blank or enter “DHCP”.
7. Enter the NetMask (example: 255.255.0.0). If using DHCP, leave blank or enter “DHCP”.
8. Click **Submit**.

Assigning a system name and location

1. To assign a name to the machine where the pCOWeb is installed, select the **SNMP** tab.
2. Enter the System name.
3. Enter the System location.
4. Click **Submit**.

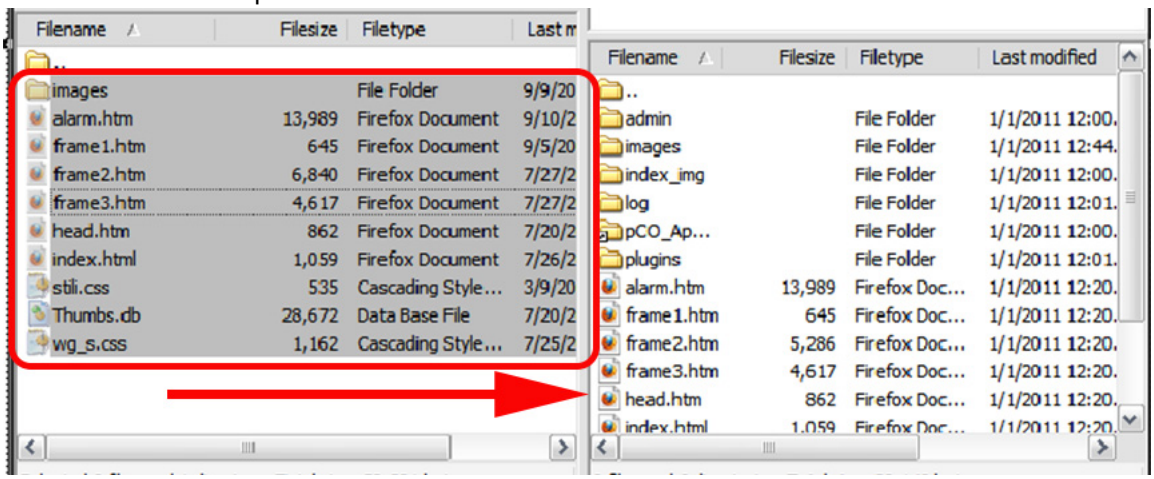
Accessing the user memory

The pCOWeb features an FTP server used to access the user memory and load or retrieve files, for example, custom HTML pages.

To use this function, the PC needs an FTP client installed. FileZilla (http://filezilla-project.org/) is used as an example in the following procedure (the procedure is similar for other FTP software).

1. Use the following parameters to connect to the pCOWeb card:
   a. Host: 172.16.0.1
   b. Username: httpadmin
   c. Password: fhttpadmin
2. Click **Quickconnect**.
3. Under “Local site”, locate the appropriate directory on either the CD or local hard drive (…Supervisory_Systems\pCOWeb\pCOWeb_HTML_Pages\CCU\). Select the appropriate sub-directory, depending on the unit size and cooling type.
   a. Leonardo Max (Cabinet Size 7)
      - CW_Imperial Meas (Chilled Water)
      - DX_Imperial_Meas (Air or Glycol Cooled DX)
      - ES_TC_Imperial_Meas (Energy Saving or Twin Cool)
   b. Leonardo Evolution (Cabinet Size 3-6)
      - CW_Imperial Meas (Chilled Water)
      - DX_Imperial_Meas (Air or Glycol Cooled DX)
      - ES_TC_Imperial_Meas (Energy Saving or Twin Cool)
4. Highlight all of the files and folders in the appropriate directory and drag and drop them into the /usr/local/root/flash/http directory of the pCOWeb card.

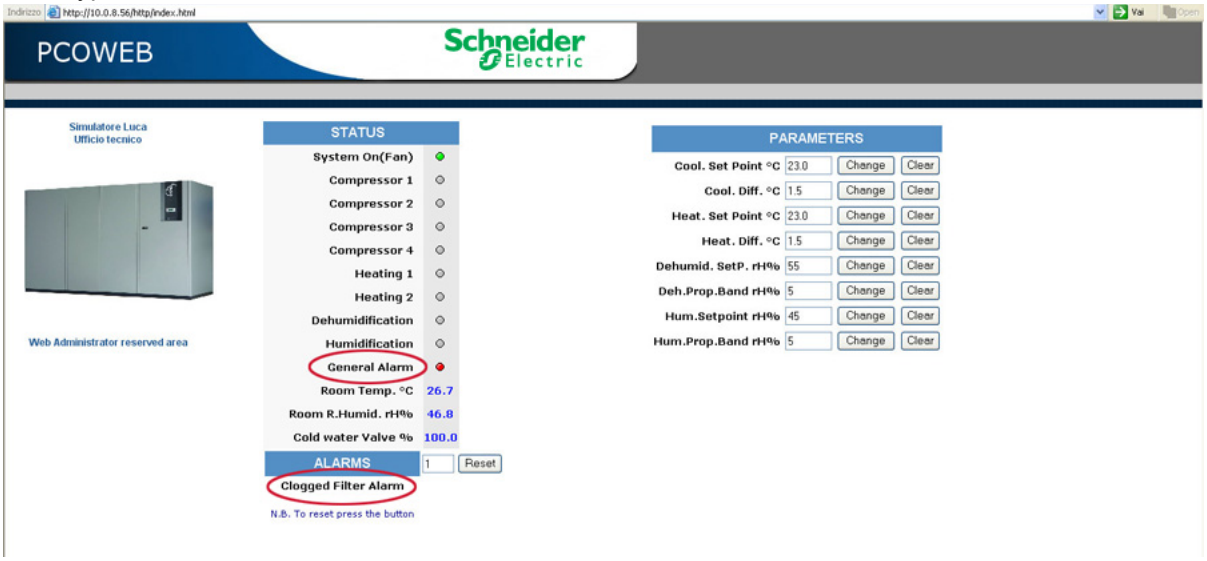
NOTE: Some FTP clients do not use the request from pCOWeb to open the user memory for "httpadmin" (/usr/local/root/flash/http/), instead they show the contents of the root position. The user needs to manually go to /usr/local/root/flash/http/.



5. If there are existing files on the pCOWeb card, you will be prompted to overwrite the existing files. Select **OK** to overwrite.
6. Close FileZilla after the file transfer is complete.

Accessing custom HTML pages

Open Internet Explorer and go to address 172.16.0.1. A personalized page appears on the screen, depending on the type of selected unit.



- The page features a photo on the left-hand side of the selected unit.
- A “Status” column indicates the operation mode on a Web page. Green indicates operational status. Gray indicates the item is not being used. In the event of an alarm state, a red indicator illuminates (if unit has a cold water valve, the opening value of the valve itself is also shown).
- An “Alarms” column indicates the description of any alarms that may be present. It should be noted that in order to reset the alarms, it is necessary to click **RESET**.
- A “Parameters” column indicates the setpoints and the relative differentials of the various parameters and the possibility of modifying them.

Resetting the system after customizing the HTML pages

1. Go to the Web Administrator reserved area.
2. Enter the Default Username: admin
3. Enter the Default Password: fadmin
4. Select **REBOOT** on the left side of the screen.

5. Wait two minutes to allow the system to reboot.

Verifying setup

1. To check that the procedure has been carried out correctly, enter the address “172.16.0.1” in the Internet Explorer browser. Internet Explorer should not allow entry into the page.
2. Enter the new pCOWeb controller address. The main start screen appears.

Returning to the initial configuration

1. Repeat steps one through seven of “Setting the IP address and subnet mask” on page 75.
2. On the Internet Protocol (TCP/IP) Properties window, select **Obtain an IP address automatically**.
3. Click **OK** to apply the changes and close the window.
4. Click **OK** to close the remaining open windows.

The PC needs to be reset so that the network “proxy” device can be re-used and it can answer to the IP address that was already set, as well as the second IP address that is compatible for direct communication with the pCOWeb (example: http://10.0.8.56).

Resetting the system after returning to the initial configuration

1. Repeat steps one through five of “Setting the IP address and subnet mask” on page 75.
2. On the Local Area Network (LAN) Settings window, select “**Use a proxy server for your LAN**” check box.
3. Select **Advanced**. The Proxy Settings window displays.
4. In the “Exceptions” field, enter the address chosen for communication with pCOWeb (for example: http://10.0.8.56).
5. Click **OK** to apply the changes and close the window.
6. Click **OK** to close the remaining open windows.

LON NETWORK

PCO10000F0 LonWorks® pCO system serial card (ACAC76124)

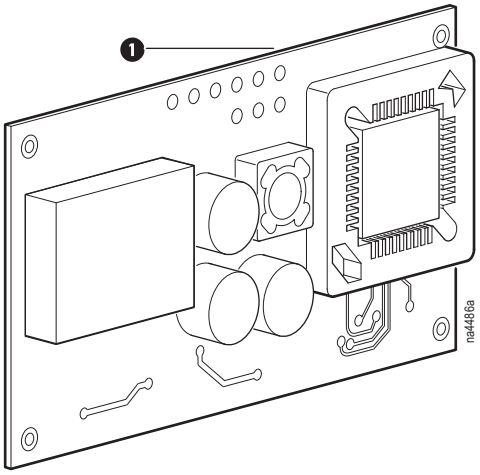
NOTE: All LON cards are programed at the factory.

Electrical damage on the electronic components usually occurs because of electrostatic discharges caused by operator improper handling. When handling these components, take the following precautions:

- Before handling any electronic component or card, ground the card.
- Keep the components inside their original package as long as possible. If necessary, take the main board from a package and put it into an anti-static package without touching both sides of the board with your hands.
- Avoid plastic bags and polystyrene.
- Avoid handing a card from one operator to another, to minimize electrostatic induction and discharges.

The PCO10000F0 and PCO10001F0 cards are used with the pCO electronic controller interface and the LonWorks® TP/FT-10 network.

Inventory



Item	Description	Quantity
1	PCO10000F0	1

Installation

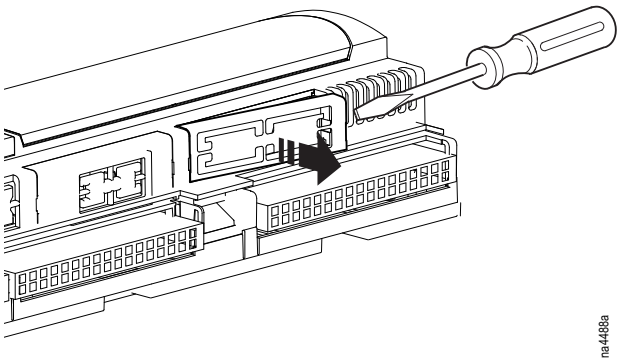
⚠ ⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

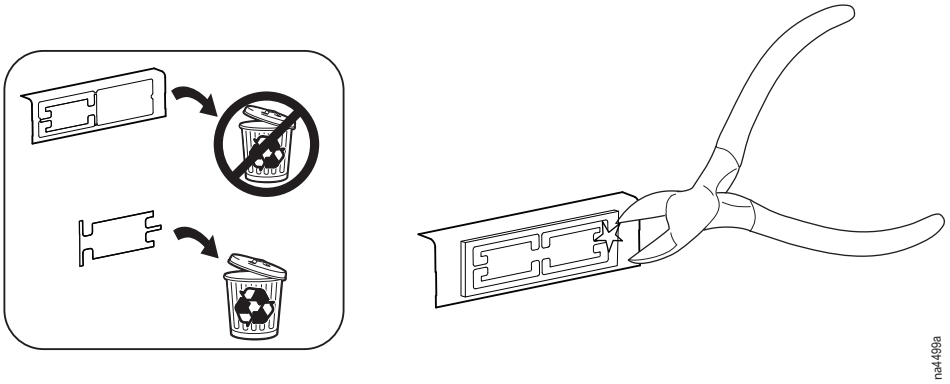
Turn off all power supplying this equipment before working on the equipment. All electrical work must be performed by licensed electricians. Practice Lockout/Tagout procedures. Do not wear jewelry when working with electrical equipment.

Failure to follow these instructions will result in death or serious injury.

1. Disconnect the power.
2. Using a screwdriver, remove the plastic hatch from the electronic controller.



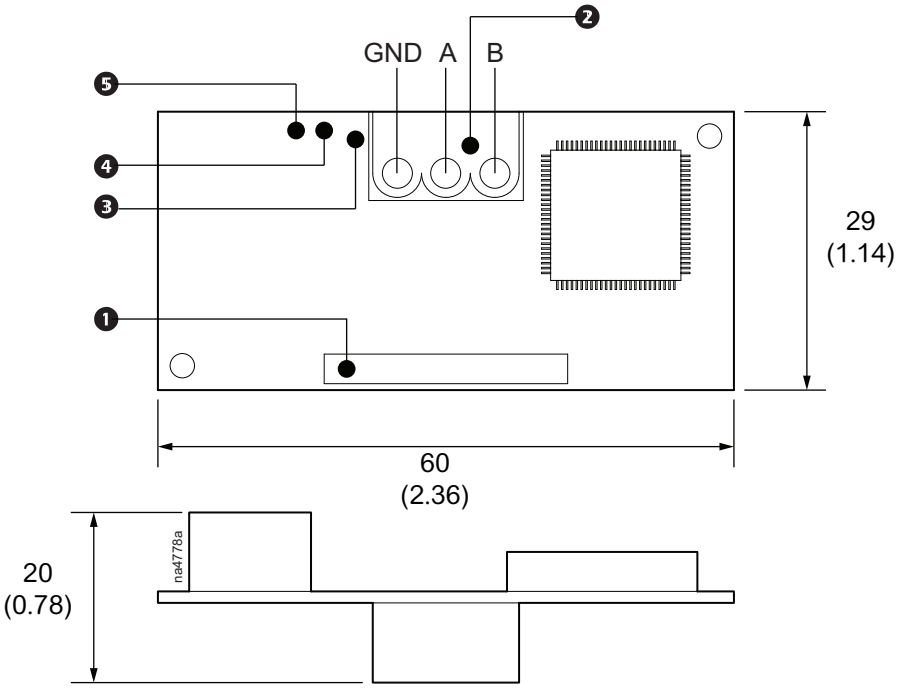
3. Using cutting nippers, remove the precut plastic hatch.



4. Insert the pCOWeb card into the pCO controller and ensure it is fully seated. Ensure that the board is properly fitted and rests against the two plastic supports on the pCO controller case.
5. **NOTE**: The insertion of the card and the fitting of the connectors may be difficult due to the space available and the location of the two plastic supports. Insert the board obliquely and rotate until the connectors are fitted.
6. Replace the hatch and line up the connector on the serial board with the hole made in the hatch.
7. Connect the communication cable.

Connecting to the LonWorks network

The connection to the LonWorks network is performed using the removable terminal connector present on the board.



*Dimensions shown in mm (in.).

Item	Description
❶	pCO connector
❷	Terminal block for LonWorks® network (GND, A, B)
❸	Service pin to the board
❹	Red anomaly LED
❺	Green service that displays normal LED operation

Activating the service pin

To activate the service pin, short-circuit the two pins using the tip of a screwdriver. Activation is confirmed when the LED service light activates.

Configuration

Using the LED display

NOTE: If installing multiple units on the network, each unit needs a unique address to avoid conflicts.

1. Press **Prg** on the display interface.
2. Select **SETTINGS**.
3. Enter the password.
4. Select **SERIAL/MODEM SETTINGS**.
5. Enter the following:

   Serial Address: 001

   Serial Speed: 4800

   Protocol: Standard
6. Navigate to the main screen.

Using the touchscreen

Path: Main > Configuration > Unit > Communication

1. Turn on the power to the unit and wait for the touchscreen to display.

   NOTE: Settings may appear on a different screen.
2. Enter your credentials and begin configuration.

   BMS1 Serial Address: 001

   BMS1 Serial Speed: 4800

   BMS1 Serial Protocol: Standard

   Remote ON/OFF Only Through Serial Communication: Enable
3. Press the **Home** button to return to the main screen.

LON serial card LED light functionality

Condition	Description
Green during the normal status of LonWorks node	Signals the status of the LonWorks node, as per the LonWorks protocol.
Green when activating the service pin	Remains on during the activation of the service pin.
Green when receiving the WINK command	Remains on for a second when receiving a WINK command from the network.
Red when signaling the failure of the connection on the pCO side	If the red anomaly LED is not illuminated, check to ensure the baud rate of the serial communication on pCO is set to 4800.

The LonWorks network setup must follow LonWorks instructions and specifications. For further information on installation, maintenance, cross-section, and cabling, refer to the LonWorks documentation.

RS485

pCOnet PCO1000BA0 (ACAC76123)

⚠ ⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

Turn off all power supplying this equipment before working on the equipment. All electrical work must be performed by licensed electricians. Practice Lockout/Tagout procedures. Do not wear jewelry when working with electrical equipment.

Failure to follow these instructions will result in death or serious injury.

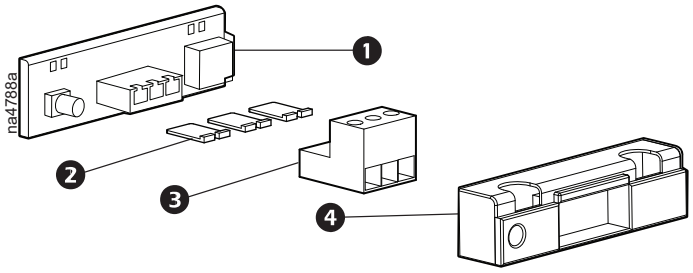
Electrical damage on the electronic components usually occurs because of electrostatic discharges caused by improper handling by the operator. When handling these components, take the following precautions:

- Before handling any electronic component or card, ground the card.
- Keep the components inside their original package as long as possible. If necessary, take the main board from a package and put it into an anti-static package without touching both sides of the board with your hands.
- Avoid plastic bags and polystyrene.
- Avoid handing a card from one operator to another, to avoid any electrostatic induction and discharges.

The pCOnet board interfaces to pCO and connects to the BACnet MS/TP network (Master-Slave Token/Pass).

NOTE: pCOnet is not compatible with the pCO series pCOnet that features Master/Slave operation.

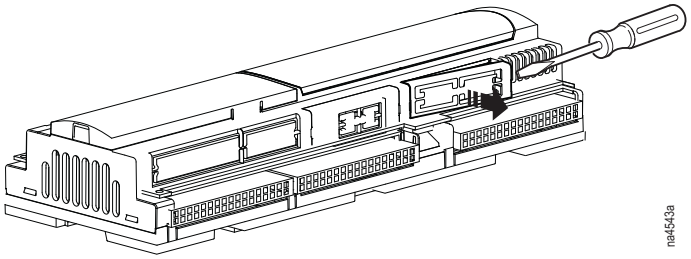
Inventory



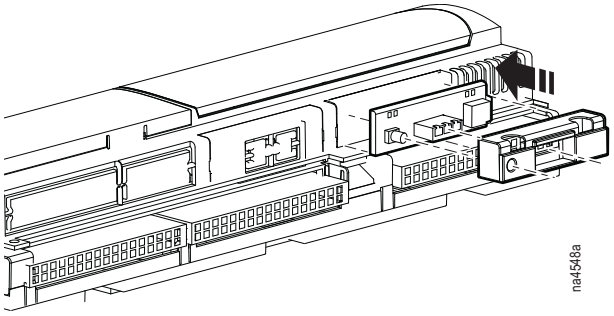
Item	Description	Quantity
❶	PCO1000BA0 interface board	1
❷	Jumpers	3
❸	Connector	1
❹	Cover	1

Installation

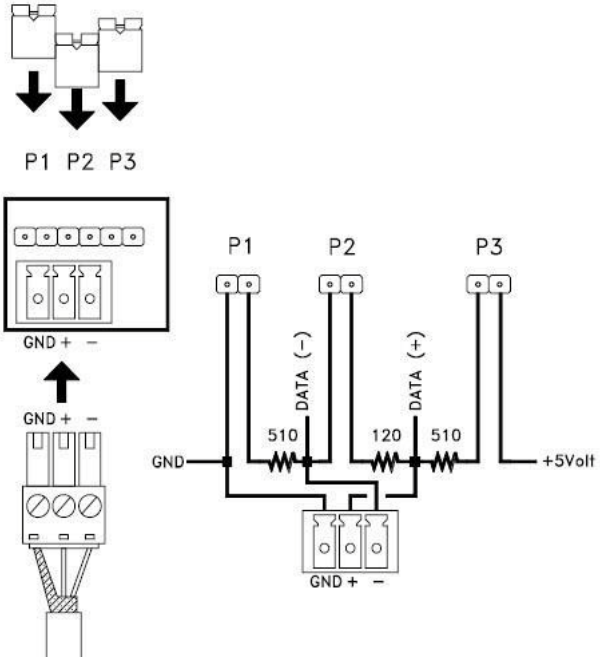
1. Disconnect the power.
2. Using a screwdriver, remove the plastic hatch from the electronic controller.



3. Insert the pCO net card in the plug-in connector. Ensure that the connector is inserted and in contact with the two supports on the pCO net card. Due to limited space, insert the pCO net card at an angle, then tilt it back until the connectors line up.



4. Insert the required jumpers. The following graphic provides jumper connection details.



- Jumpers P1, P2, and P3 are located inside the front opening of the cover.
- Jumper P1 adds a 510 ohm polarization resistance between the negative data line (-) and GND.
- Jumper P2 adds a 120 ohm terminal resistance between the two data lines (+) and (-).
- Jumper P3 adds a 510 ohm polarization resistance between the positive data line (+) and the +5 Vdc internal voltage.

Insert all three jumpers on the unit at the start of the network and the unit at the end of the network. Do not insert the jumpers on the intermediate units.

NOTE: If the device used to read the data from the 485 network is grounded, and the RS232-RS485 converter or the RS485 serial port on the device have functional insulation of less than 2kV, the connector G0 on the pCO board must be grounded. The board cannot be installed in direct contact with the metal panel on the electrical panel.

5. Connect the communication cable. Wind the cord around a ferrite core (field supplied.)
6. Replace the cover supplied with the pCOnet controller.

Configuration using the LED display

NOTE: If installing multiple units on the network, each unit requires a unique address to avoid conflicts.

1. Press **Prg** on the display interface.
2. Select **SETTINGS**.
3. Enter the password.
4. Select **SERIAL/MODEM SETTINGS**.
5. Enter the following:

   Serial Address

   Serial Speed

   Protocol: STANDARD
6. Navigate to the main screen.

Configuration using the touchscreen

Path: Main > Configuration > Unit > Communication

1. Turn on the power to the unit and wait for the touchscreen to display.

NOTE: Settings may appear on a different screen.

2. Enter your credentials and begin configuration.

   BMS1 Serial Address: Enter the required address

   BMS1 Serial Speed: Enter the required serial speed

   BMS1 Serial Protocol: Modbus

   Remote ON/OFF Only Through Serial Communication: **Enable**

3. Press the **Home** button to return to the main screen.

Status LED

The Status LED (left) indicates the status of communication with the controller and the status of the pCOnet controller.

Starting sequences, power-up, and restarting

The starting sequence on power-up or after restarting pCOnet controller provides the following sequence:

1. Off for two seconds.
2. Two seconds after restarting:

   quick flash > red > green > red > green

3. Five seconds after restarting:

steady green
Approximately 50 seconds after restarting, communication begins. The following table provides active alarm conditions and descriptions on the status LED.

Condition	Description
Quick green > OFF > green	Indicates communication with the pCO controller is normal.
Slow red > OFF >r ed	Indicates communication has not been established with the pCO controller.
Green > red > green	Indicates that the pCOnet has detected an error, or that there is a temporary lack of response from the pCO controller.

Once the starting sequence has been completed, the Status LED flashes to indicate the quality of communication with the pCO controller.

RS485 LED

The RS485 LED is located on the right side of the card, and indicates the status of communication with the BACnet MS/TP network (RS485) and displays the following information:

For starting sequence on power-up or after rebooting the pCOnet, the RS485 LED switches in the following sequence:

1. Off for approximately 50 seconds.
2. Approximately 50 seconds after restarting the pCOnet controller, a slow green–red–green–red light displays and the BACnet MS/TP network activates.

Status of communication with the BACnet MS/TP network

Once the starting sequence completes, the RS485 LED flashes to indicate the quality of communication with the BACnet MS/TP network. The following table provides active alarms conditions and descriptions on the status LED.

Condition	Description
Green with occasional red flashes	Communication is OK (BACnet MS/TP meaning: green ON = pCOnet keeps the Token (control of the MS/TP network); green OFF = pCOnet DOES NOT keep the Token; red on = Poll-For-Master, search for a Master to pass the Token to).

Green and red on together	(BACnet MS/TP meaning: continuous Poll-For-Master): communication not established (connection problems, or no network device found); this may depend on electrical connection difficulties or communication settings that are not compatible with the other network devices connected.

Using the push button

The push button restarts the pCOnet controller and recalls the factory configuration.

Restarting the pCOnet controller

With the board on and operating normally (status LED flashing continuously), hold the button between five and 10 seconds.

Approximately ten seconds after releasing the button, the Status LED stops flashing. Fifteen seconds later, the pCOnet restarts and the Status LED quickly flashes red-green-red-green.

Recalling the factory configuration (factory boot switch mode)

The pCOnet card comes with user parameters set to factory configuration values. See “Using the pCOnet parameters” on page 87 for factory values. In the “factory boot switch¨ mode, pCOnet does not save the recalled values. When restarted without pressing the button, the pCOnet card again loads the user settings. The following procedure sets the default pCOnet parameters:

1. Switch the pCOnet controller on with the pCOnet board inserted by pressing and holding the button for at least 20 seconds. The red status LED flashes slowly three times.
2. After three red flashes on the LED, release the button. The LED turns green. The LED then confirms recognition of the button by flashing three times red-off, and then returns to green.

Complete start-up of the pCOnet controller takes another 40 seconds and the RS485 LED starts flashing. At this point, pCOnet controller be accessed via a remote connection.

Additional documentation

Additional documentation relating to the pCOnet BACnetÆË protocol, PICS (Protocol Implementation Conformance Statement) and the BACset configuration tool are available at http://ksa.carel.com.

Configuring pCOnet parameters

This section provides procedures to configure the pCOnet parameters for correct communication over an MS/TP network.

1. Connect to pCOnet via a RS485 connection to a computer. During configuration, the Carel product code CVSTDUMOR0 for USB ports can be used. USB converters should not be used in the installation due to the large volume of data transmitted across a complex BACnet network
2. Install the Carel “BACset” configuration tool available at http://ksa.carel.com.

NOTE: If the values of the pCOnet parameters are not suitable, communication with BACset may not be possible. To connect to pCOnet, restart the pCOnet controller using the “factory boot switch” mode.

Using the pCOnet parameters

The following table and definitions provides details on parameter usage.

Parameter	Min	Max	Factory
Device instance	0	4194303	77000
Station Address	0	127	0
MaxMaster	0	127	127
Max Info Frames	0	255	20
BaudRate	9600-19200-38400-76800		38400

Device Instance: The number that uniquely identifies a device inside the BACnetÆË network (the BACnetÆË network can also include non-MS/TP BACnetÆË devices). If two units have the same Device Instance, identification errors will be generated.

Station Address: The number that differentiates the units in the BACnetÆË MS/TP network. If two units have the same Station Address, identification errors will be generated. To speed up the data exchange between the Master units, the Station Address of the Master units should start from 0 and continue without skipping any numbers.

Max Info Frames: This establishes the maximum number of information packages exchanged. When this number is exceeded, the Master unit gives up control (Token) of the network to another Master unit. It indirectly establishes a priority between the Master units in the network. High numbers guarantee the Master a higher data exchange volume.

MaxMaster: To speed up data exchange between the Master units, MaxMaster should be set to the Station Address of the Master with the highest Station Address.

Each Master unit, after having used the network, passes over control to the next Master. The MaxMaster parameter specifies to pCOnet the address of the network Master with the highest Station Address. Using this parameter, pCOnet will know that there is no other Master with a higher Station Address than MaxMaster. pCOnet then gives control of the network to the next Master, however not beyond MaxMaster. If no next Master is found, the cycle begins again, with control being given to the Master with the lowest Station Address.

BaudRate: The data transfer speed. The BaudRate must be the same for all the devices connected, otherwise the exchange of data will generate communication errors. For extended networks, low baud rates should be specified. This guarantees less communication errors. If the Baud Rate is 76800, make sure that the device supports this communication speed. This baud rate is not supported by the RS232 serial port on a normal PC.

RS485

PCOS004850 serial card for pCO controller (Part # 0M-21AS108CDZ)

⚠ ⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

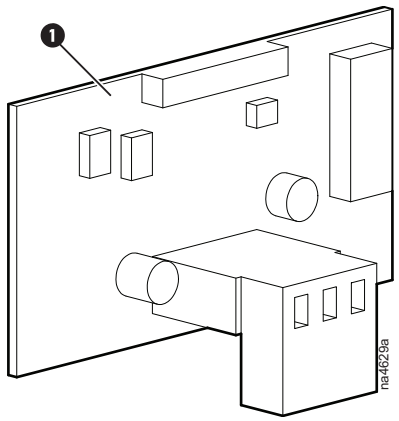
Turn off all power supplying this equipment before working on the equipment. All electrical work must be performed by licensed electricians. Practice Lockout/Tagout procedures. Do not wear jewelry when working with electrical equipment.

Failure to follow these instructions will result in death or serious injury.

Electrical damage on the electronic components usually occurs because of electrostatic discharges caused by operator improper handling. When handling these components, take the following precautions:

- Before handling any electronic component or card, ground the card.
- The components must be kept inside their original package as long as possible. If necessary, take the main board from a package and put it into an anti-static package without touching both sides of the board with your hands.
- Avoid non-anti static plastic bags and polystyrene.
- Avoid handing a card from one operator to another, to avoid any electrostatic induction and discharges.

Inventory

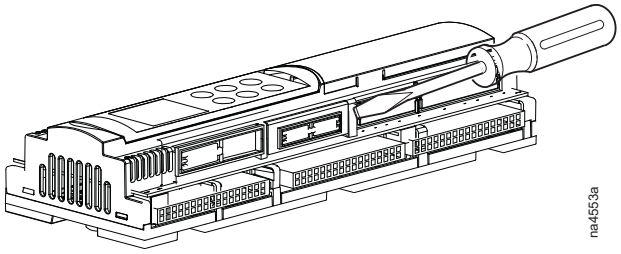


Item	Description	Quantity
❶	PCOS004850 serial card	1

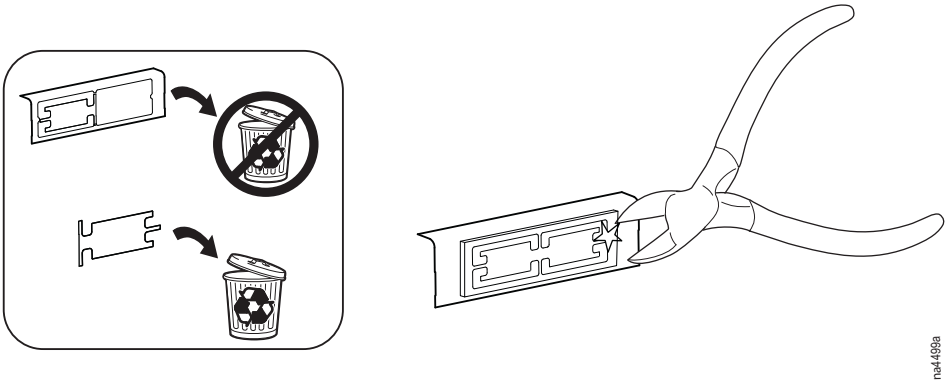
The PCOS004850 is an optional communication card for the pCO series controls which allows you to directly interface the pCO to a RS485 supervisory network. The card ensures the controller communicates with the RS485 serial network. The maximum baud rate is of 19200 baud. This is set using the software.

Installing

1. Disconnect the power.
2. Using a screwdriver, remove the plastic hatch from the electronic controller.

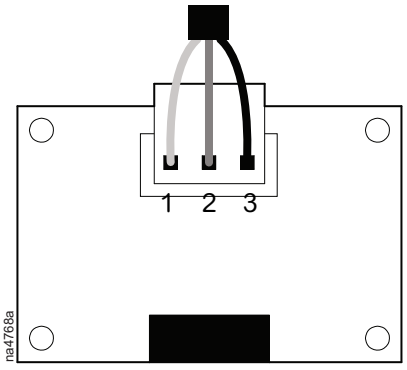


3. Using cutting nippers, remove the precut plastic hatch.



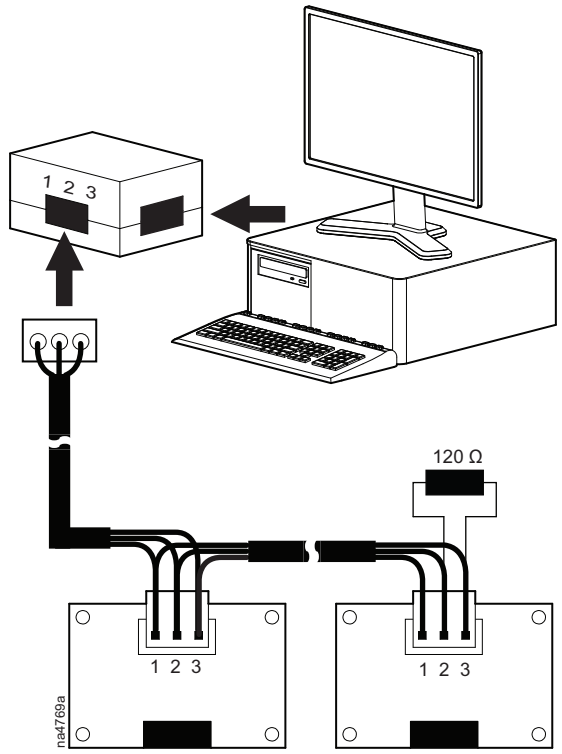
4. Insert the optional card into the corresponding connector and ensure the card is firmly placed on both plastic supports on the pCO controller case.
5. Close the cover using a screwdriver to fit the outside card terminal to the cover.

The connection with the RS485 network is carried out by means of the plug-in terminal connector on the card. Pin-wiring of the connector is stamped on the card.



Pin	Connector
1	GND
2	RX+/TX+
3	RX-/TX-

If the card is placed in the last position of the supervision serial line, pins 2 and 3, you must connect a 120-Ω1/4 W end line resistor.



Configuring using the LED display

NOTE: If installing multiple units on the network, each unit needs a unique address to avoid conflicts.

1. Press **Prg** on the display interface.
2. Select **SETTINGS**.
3. Enter the password.
4. Select **SERIAL/MODEM SETTINGS**.
5. Enter the following:
    a. Serial Address
    b. Serial Speed
    c. Protocol: **Modbus**
6. Navigate to the main screen.

Configuring using the touchscreen

Path: Main > Configuration > Unit > Communication

1. Turn on the power to the unit and wait for the touchscreen to display.

    NOTE: Settings may appear on a different screen.
2. Enter your credentials and begin configuration.

    BMS1 Serial Address: Enter the required Serial Address

    BMS1 Serial Speed: Enter the required Serial Speed.

    BMS1 Serial Protocol: Modbus

    Remote ON/OFF Only Through Serial Communication: Enable
3. Press the **Home** button to return to the main screen.

RS232

PCO100MDM0/ RS232 field bus card for pCO[1] (ACAC76125)

⚠ ⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

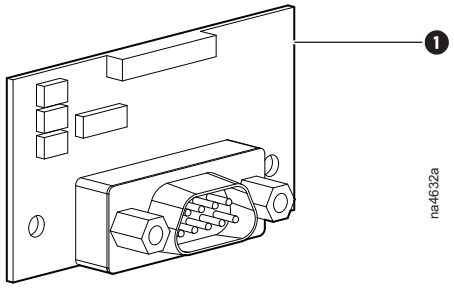
Turn off all power supplying this equipment before working on the equipment. All electrical work must be performed by licensed electricians. Practice Lockout/Tagout procedures. Do not wear jewelry when working with electrical equipment.

Failure to follow these instructions will result in death or serious injury.

Electrical damage on the electronic components usually occurs because of electrostatic discharges caused by operator improper handling. When handling these components, take the following precautions:

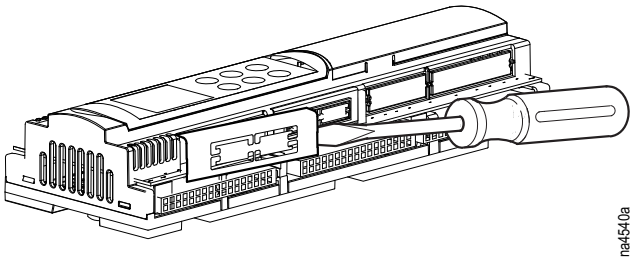
- Before handling any electronic component or card, ground the card.
- The components must be kept inside their original package as long as possible. If necessary, take the main board from a package and put it into an anti-static package without touching both sides of the board with your hands.
- Avoid non-anti static plastic bags and polystyrene.
- Avoid handing a card from one operator to another, to avoid any electrostatic induction and discharges.

Inventory

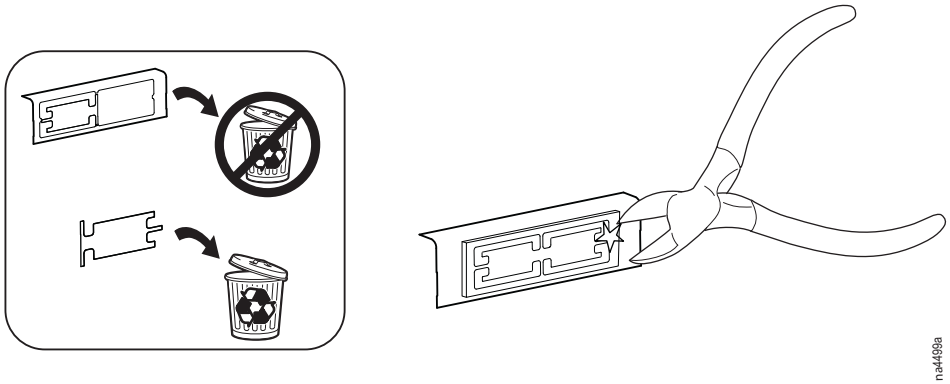


Item	Description	Quantity
❶	PCO100MDM0 board modem for PCO	1

1. Disconnect the power.
2. Using a screwdriver, remove the plastic hatch from the electronic controller.

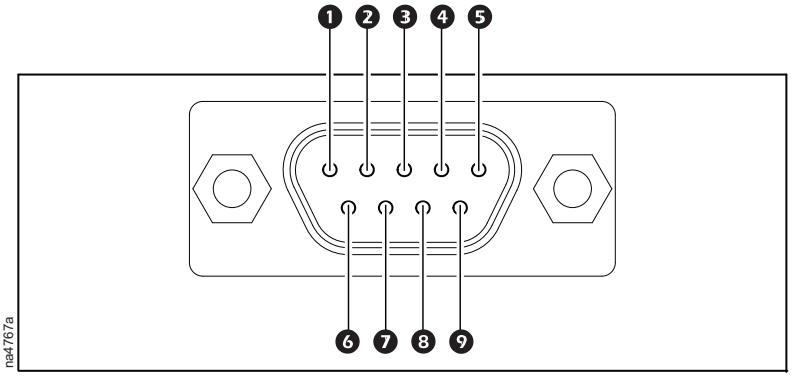


3. If necessary, select the type of analog inputs using the dip switch. This must be done before installing the card (pCO[1] controller only).
4. Using a cutting nippers, remove the precut plastic hatch.



5. Insert the card in the corresponding plug-in connector, making sure it is fully inserted against the two plastic supports on the pCO controller.
6. Close the cover, ensuring the connector on the optional card lines up with the cover.

The modem is connected using the 9-pin socket on the card. A diagram of the pins on the connector are shown in the following figure.



Socket	Description	Socket	Description
❶	n.c	❺	GND Frame
❷	RX	❻	n.c
❸	TX	❼	RTS
❹	DTR	❽/❾	n.c

Configuring using the LED display

NOTE: If installing multiple units on the network, each unit needs a unique address to avoid conflicts.

1. Press **Prg** on the display interface.
2. Select **SETTINGS**.
3. Enter the password.
4. Select **SERIAL/MODEM SETTINGS**.
5. Enter the following:

   Serial Address

   Serial Speed

   Protocol: Modem GSM
6. Navigate to the main screen.

Configuring using the touchscreen

Path: Main > Configuration > Unit > Communication

1. Turn on the power to the unit and wait for the touchscreen to display.

   NOTE: Settings may appear on a different screen.
2. Enter your credentials and begin configuration.

   BMS1 Serial Address: Enter the required serial address

   BMS1 Serial Speed: Enter the required serial speed

   BMS1 Serial Protocol: Modem GSM

   Remote ON/OFF Only Through Serial Communication: Enable
3. Press the **Home** button to return to the main screen.

Worldwide Customer Support

Customer support for this or any other product is available at no charge in any of the following ways:

- Visit the Schneider Electric Web site to access documents in the Schneider Electric Knowledge Base and to submit customer support requests.
  - **www.schneiderelectric.com** (Corporate Headquarters)
    Connect to localized Schneider Electric Web sites for specific countries, each of which provides customer support information.
  - **www.schneiderelectric.com/support/**
    Global support searching Schneider Electric Knowledge Base and using e-support.
- Contact the Schneider Electric Customer Support Center by telephone or e-mail.
  - Local, country-specific centers: go to **www.schneiderelectric.com > Support > Operations around the world** for contact information.

For information on how to obtain local customer support, contact the representative or other distributors from whom you purchased your product.

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